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SPECIFICATIONS ISSUE
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* * *

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Southern Hotel Chain Installs Cooling on A Trial Basis

NASHVILLE, Tenn.—The Dinkler hotel chain in the South is going to give air conditioning a chance to prove itself by making installations on two bedroom floors in the Tutwiler hotel in Birmingham and the Jackson hotel in Nashville.

Slightly higher rates will be charged for the rooms on the conditioned floors in order to determine the reaction of guests.

The air-conditioning equipment is of the central-station type, so designed as to permit individual control in each bedroom.

U. of I. Reports Costs & Benefits Of Conditioning

Research Workers Explain Development to Public At University Meeting

URBANA, Ill. May 5 (Special to ELECTRIC REFRIGERATION NEWS)—How air conditioning improves health and comfort, comparative costs of different methods of comfort cooling, and the elements in an air-conditioning system that bring about proper results were discussed at the First Conference on Air Conditioning conducted by the University of Illinois College of Engineering here yesterday and today.

Complete air conditioning is a year-round service, President Arthur Cutts Willard of the University of Illinois, internationally-known ventilating and heating engineer, told 150 persons at the opening session.

A complete system for winter provides controlled production of heat and humidity with removal of 75% or more dust and dirt. A complete system for summer provides control or regulation of air temperature or humidity or both within certain rather wide limits by air cooling devices, dehumidifiers, or both, he said.

It is possible to overcool, the engineer-university president cautioned. Seeking the same temperature in summer and winter is unwise, he said, because people can endure higher temperatures in summer. Temperatures much below 80° F. are unnecessary because of clothing and body adaptation to higher outside temperature.

Better health and longer life were forecast as a result of air conditioning by F. C. Houghten, director of the American Society of Heating and Ventilating Engineers research laboratory at Pittsburgh, Pa.

"Increased knowledge and control of food and water supply have reduced and eliminated diseases of the digestive tract. Today outstanding ailments are respiratory. Greater attention to factors affecting air purity and satisfaction may be expected to result in a profound effect on our comfort, health, and longevity," he said.

Factors of air condition affecting comfort and health, as listed in order of importance by Mr. Houghten, are: temperature, moisture content, motion, dust content, freedom from odors, other harmful vapors, gases, bacteria, or harmful substances.

Explaining importance of humidity, he said that with 100% relative humidity, 73° F. (dry bulb) was a comfortable summer warmth; with 60% humidity, 78° F.; with 20% humidity, 84°.

Reduction of odors to a degree of density below perception by the senses is now the chief reason for introducing outdoor air and the governing factor as to amount. Rebreathing of carbon dioxide exhaled by people is

(*Concluded on Page 41, Column 1*)

Cleveland Dealers Seek Uniform Terms On Commercial

By T. T. Quinn

CLEVELAND—Commercial refrigeration distributors, at a meeting last week, took further steps toward establishing a set of reciprocal trade practices, which, it is hoped, will eventually become a sort of "unwritten code" for commercial refrigeration selling practices in the city.

Attending the meeting were representatives of five companies operating in the city; Electrical Housekeeping, Inc. (General Electric), Phoenix Ice Machine Co., York Ice Machinery Corp., General Refrigeration Sales Co. (Lipman), and Avery Engineering Co. (Carbondale). One air-conditioning company, Corozone Air Conditioning Co., was also represented at the meeting.

Discussion at the meeting, which was presided over by C. H. Rowland,

(*Concluded on Page 2, Column 2*)

Universal Cooler Earnings Improve

DETROIT — A 122% increase in household refrigerator sales was largely responsible for Universal Cooler's increase in net profit from $67,214.13 for the quarter ending March 31, 1935, to $162,924.56 for the corresponding quarter in 1936, declares F. S. McNeal, president and manager of the company, in making the report.

For the half year ended March 31, 1936, net profit amounted to $80,799.30 before federal income taxes were deducted, compared with a net loss of $70,959.08 for the same period of the preceding fiscal year, Mr. McNeal stated.

Advance in the commercial sales volume, where the company largely makes equipment for resale by other manufacturers under their own brand names, also contributed to the profit increase, Mr. McNeal stated.

Mr. McNeal says that a new policy

(*Concluded on Page 2, Column 1*)

F-M Sales for Quarter Increase Nearly 400%

INDIANAPOLIS—A 368% sales increase for the home appliance division of Fairbanks-Morse & Co. for the first quarter of 1936 over a like period in 1935 has been reported by W. Paul Jones, general manager of the division.

"Every month in 1936 has shown an increase in orders over the corresponding month of 1935," Mr. Jones said.

With an increase of distributing and dealer organizations, all except a few sections have been closed in the company's drive to effect 100% national coverage in 1936, he stated.

Household & Commercial Sales Set New Records In March

Please Send Cash When Ordering Extra Copies

On account of the expense of publishing Specifications, and the clerical work involved in handling extra copy orders, it is necessary to charge *25 cents per copy* for the "Specifications Issues." This rate will apply to all quantities.

Twenty-five cent coin cards will be provided for distribution among dealer and distributor organizations, so that papers may be mailed directly to individual addresses, if desired.

In ordering extra copies, *please send check, cash, or stamps with order,* since it is impracticable for us to incur the additional expense of setting up charge accounts for extra-copy sales. We are anxious to render the best possible service to the industry, and we earnestly ask your cooperation in avoiding unnecessary complications which delay the prompt handling of hundreds of these small transactions.

O'Keefe & Merritt Adds 6 Ft. Model

LOS ANGELES—O'Keefe & Merritt recently announced the addition of a 6.1-cu. ft. model, model 366, to its 1936 line of household refrigerators.

The new model has a shelf area of 11 sq. ft., and exterior dimensions of 58 x 30 x 25. Three ice trays hold 84 cubes.

Low operating cost is claimed by the company as one of the machine's features, because of the oscillating compressor. Insulation is 3 inches thick.

The interior of the box is full porcelain with rounded corners, and has close-mesh shelves, Udlyte Cadmium finished evaporator, and porcelain finished door to the ice compartment. A push-bar of black catalin chrome-trimmed hardware opens the door.

Features of the new model include an interior electric light, combination drawer-type food freshener, sliding dairy basket, glass meat storage and defrost tray, vegetable bin for semi-perishables, automatic ice tray release, full automatic twelve point temperature control, and automatic defrosting. Removable hinged shelves make possible the "Adapt-a-Shelf" arrangement.

Water pitcher, covered left-over bowl, and rectangular pottery covered dish are the accessories.

285,900 Household Units, 21,346 Commercial Jobs Sold by Manufacturers

DETROIT—Following the precedent established in January and February, world sales of household electric refrigerators by manufacturers to distributing outlets in March totaled 285,900 units to crack all previously established sales records for the month of March, according to estimates made by ELECTRIC REFRIGERATION NEWS.

Commercial refrigerating machine sales reported by 15 manufacturers followed the same record-breaking path, the total of 21,346 units for all applications surpassing the previous March record of 18,330 units set in 1930.

Fifteen member companies of the Household Refrigeration Section of the Refrigeration Division of National Electrical Manufacturers Association (Nema) reported sales of 265,904 household electric refrigerators in March.

March sales this year were 25% greater than sales in the same month last year. Following are comparisons by months for the first quarters of 1935 and 1936:

	1935	1936	Per Cent Increase
January	103,400	125,400	25
February	128,400	186,200	45
March	228,000	285,900	25
First Quarter	**459,800**	**597,500**	**30**

New York led in the sales-by-states

(*Concluded on Page 2, Column 5*)

Crosley Earnings Double For 9 Months Record

CINCINNATI—Crosley Radio Corp. has reported a net profit of $687,877 for the first three months of this year, equal to $1.26 a share, as compared with $315,268 for the same period of 1935, or 57 cents a share.

For the twelve months ending March 31, earnings amounted to $1,157,552 or $2.12 a share, in contrast to 893,745 or $1.64 a share for the corresponding previous twelve months.

Kerotest Distributor Named in El Paso

EL PASO, Tex.—Zork Hardware Co., 309 N. El Paso St. here, was recently appointed distributor for Kerotest products in El Paso and surrounding territory.

The new jobber will have nine men contacting the refrigeration trade in this territory. They are: John Comer, Tom Gentry, Ralph Appleby, M. J. Cooper, J. R. McAleer, J. B. Reeves, G. M. Langdon, L. A. Velarde, and John Cantwell.

COMMERCIAL MACHINE SPECIFICATIONS

ALL MODELS OF 36 MAKES TABULATED ON PAGES 4 - 24

Specifications of 1936 models of commercial condensing units are presented on pages 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, and 24 of this issue.

Specifications of self-contained commercial refrigeration applications (in which the machine is a part of the equipment) are published on pages 15, 17, 19, 21, and 23.

Capacities of the units, unless otherwise specified, are given in B.t.u.'s per hour under the following conditions approved by the Refrigeration Division of Nema, American Society of Refrigerating Engineers, and the Refrigerating Machinery Association:

1. *A mechanical condensing unit* is a specific refrigerating machine combination for a given refrigerant consisting of a motor driven compressor for operation at a given speed, a condenser, a liquid receiver, and the regularly furnished accessories.

2. *The power input rating* of an electrically driven mechanical condensing unit is its total power input in watts when the unit is operated under the conditions specified in paragraph 4.

3. *The capacity* of a mechanical condensing unit is the refrigerating effect in B.t.u./hr. produced by the change in total heat content between the liquid refrigerant leaving the condensing unit per hour and the total heat content of the vapor refrigerant entering the condensing unit per hour under the conditions defined in paragraph 4.

4. *The capacity rating* of a mechanical condensing unit shall be expressed in B.t.u./hr. and/or tons, each of 12,000 B.t.u./hr., and shall be measured under conditions defined as follows:

(a) The unit ratings shall be divided into four standard groups based on refrigerant vapor and cooling water temperatures as follows:

Group No.	Temperatures in Degrees Fahrenheit Refrigerant Vapor Saturated	Entering Compressor	Cooling Water Ingoing	Outgoing
I	minus 10	65	75	85
II	plus 5	65	75	90
III	plus 20	65	75	10
IV	plus 40	65	75	95

(b) The saturated vapor temperature shall be determined by the suction pressure as measured at the suction inlet connection to the condensing unit.

(c) The standard ambient temperature for air cooled and/or water cooled condensing units shall be 90° F.

5. *The performance factor* of a mechanical condensing unit is the ratio of its capacity to its energy input, expressed in B.t.u./watt hr. and/or tons, each of 12,000 B.t.u./hr., per kilowatt.

6. *The cooling water consumption* of a mechanical condensing unit is the total number of gallons per hour required under the conditions specified in paragraph 4.

Exceptions to this method of rating are noted as follows:

Howe Ice Machine Co. units are rated on the basis of a suction temperature of 16° F.

Kelvinator Corp. rates its units under Group III of the rating standards at a suction temperature of 18° F. instead of 20° F. on sulphur dioxide models, and 16° F. instead of 20° F. on Freon models.

Merchant & Evans units are rated for the following suction temperatures: 23° F., 14° F., 5° F., and -4° F. Nash rates its methyl chloride units under the same conditions as M & E, but its Freon units are rated at suction temperatures of 50° F., 45° F., 41° F., and 32° F.

Reliance Refrigeration Machine Co. uses the following suction temperatures in rating its units: 25° F., 20° F., 10° F., and 0° F.

Following is an index of the specifications:

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Brunner Mfg. Co. 8
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Universal Cooler's Earnings Improve

(*Concluded from Page 1, Column 3*)

of selling directly to utilities and department stores was adopted the first of this year with the result that in three months, outstanding dealer representation was established in cities whose combined population represents more than 78% of the national sales potential.

Among the stores now selling refrigerators made by Universal Cooler are: J. N. Adam Co., Buffalo; C. C. Anderson Stores Co., Boise, Idaho; Anderson-Dulin-Varnell, Knoxville, Tenn.; Barker Bros., Los Angeles; The Bon Marche, Seattle; Ludwig Baumann, New York City; Commonwealth Edison Co., Chicago; The Davis Store, Chicago; L. S. Donaldson Co., Minneapolis; Marshall Field & Co., Chicago; Gimbel Bros., Philadelphia; The Golden Rule, St. Paul; Hale Bros., San Francisco; Hochschild Kohn & Co., Baltimore.

The J. L. Hudson Co., Detroit; Jordan Marsh Co., Boston; Kaufman Dept. Stores, Inc., Pittsburgh; Lamson Bros. Co., Toledo; The May Co., Cleveland and Los Angeles; Meier & Frank Co., Portland, Ore.; Miller & Rhoads, Inc., Richmond, Va.; Morehouse Martens Co., Columbus, Ohio; Pearson Co., Inc., Indianapolis; Rollman & Sons Co., Cincinnati; Stewart Dry Goods Co., Louisville; Titche Goettinger Co., Dallas; Wieboldt's, Chicago; and Woodward & Lothrop, Washington, D. C.

N. Y. Westinghouse Moves

NEW YORK CITY—Executive and sales offices of the New York City branch of Westinghouse Elec. & Mfg. Co. have been moved to the Westinghouse Bldg. at 150 Broadway Ave.

Standard Terms of 20% Down, 24 Months to Pay, Sought by Cleveland Commercial Dealers

(*Concluded from Page 1, Column 3*)

commercial sales manager of Electrical Housekeeping, centered around down payments and finance terms. Several of those present reported that, in some instances, competitors were offering terms as long as five years, with low down payments.

As the initial step toward setting up a code of trade practices, those present at the meeting agreed to limit finance sales to a maximum of 24 months, with a minimum down payment of 20%, of which 10% is to be paid when the order was signed, and 10% upon delivery of the equipment. When sale and delivery followed close upon each other, the 20% will be collected as the initial down payment.

Also discussed at the meeting was the problem, prevalent in the city at present, of commercial refrigerator distributors handling a line of compressors which they sell at reduced prices in order to obtain orders for commercial display cases. Several methods of coping with the situation were suggested, although no definite plan of action was decided upon.

Action decided on at the meeting is subject to approval of other commercial distributors in the city. A copy of the recommended moves was sent to companies who did not attend, and their attitude will be determined before the action is made binding.

Confidence was expressed, however, that commercial men not in attendance would favor establishment of definite down payment and finance terms, since this was a problem of considerable concern to all distributors in the city.

Later, if the distributors of refrigerating equipment are able to arrive at some basis of common action in conducting their sales and financing policies, distributors of commercial refrigerators will be invited in for a conference, at which mutual problems will be discussed and efforts made to arrive at a plan of common action beneficial to all those connected with commercial refrigeration activity in the city.

Last week's meeting was the second held by the group, devoted to the settlement of mutual problems in the commercial refrigeration and air conditioning business. No definite plan of organization is being considered at present, but persons back of the movement explained that it was felt that, if those in the industry could get together occasionally and talk over their common problems, agreement might be reached on several points which would raise the standards of both commercial refrigeration and air-conditioning activity in the city.

Acer Will Manage Crosley Apt. Sales in Brooklyn

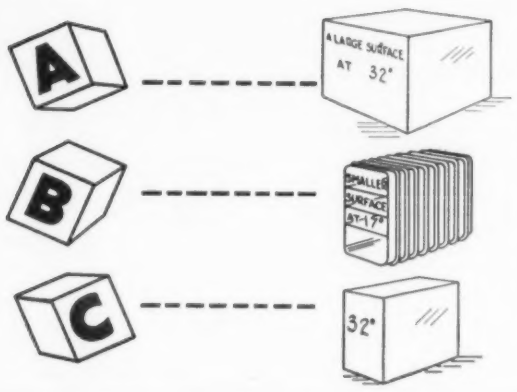
BROOKLYN—Peter F. Acer has been appointed apartment house sales manager in this territory for Crosley Radio Corp.'s electric refrigeration department. He recently resigned from Rex Cole, Inc., General Electric distributor, where he held a similar position.

Mr. Acer will establish headquarters in new offices in the downtown section of this city, at which time additional salesmen will be added to his organization.

Joe Cook Inspects a Leonard

Joe Cook, stage and radio comedian, tells George Conover, managing director of the Electrical Association of Philadelphia, that he likes the Leonard's built-in thermometer the best of all its features.

THE ABC OF DEFROSTING



Size of block of ice (32°) required to properly chill an ice refrigerator.

Drawn to same scale, this represents the size of evaporator (17° temperature) required to properly chill an electric refrigerator.

If evaporator is allowed to become ice-coated through lack of regular defrosting, it becomes equal in chilling effect to a small block of ice, the limited surface of which is obviously inadequate to properly cool the whole food compartment. The only refrigerator properly equipped to handle defrosting is Sparton, which replaces human forgetfulness with completely automatic electric clock control.

..AND THE ABC OF SPARTON SELLING

ANTIFROST ECONOMY CLOCK

THE BASKADOR

VEGABIN

AND BASKADRAWER

FIVE-YEAR WARRANTY

● Sparton hasn't overlooked a single item that might appeal to your prospects. All features are in the Sparton to help you sell and they are highly important features. Point them out to a prospect and she's sold. Start with the Antifrost economy clock which makes the Sparton completely automatic—a feature which is tremendously important in saving electricity money and food money. That hits the vital nerve of everyone's pocketbook. This important feature holds your prospect and the other features completely sell her. There's volume and profit in the Sparton line. Start your cash register ringing now. The Sparks-Withington Company, Jackson, Michigan, Sparton of Canada, Ltd., London, Ontario.

All-Feature Sparton Refrigerator

COLD AND SILENT AS A WINTER NIGHT

G-M Buys Crosley Radio Factory at Kokomo

NEW YORK CITY—Purchase of the Crosley Radio Corp.'s factory at Kokomo, Indiana, by the General Motors Corp., which will manufacture automobile radios there, was announced recently by Alfred P. Sloan, Jr., president of the General Motors Corp.

At the same time President Powel Crosley, Jr., of Crosley Radio Corp., announced that the radio manufacturing activities of the Crosley Radio Corp. will be continued and expanded in the Cincinnati factories of the company, which will reopen its Alfred street plant for this purpose to augment the facilities of the main plant at Colerain and Arlington Streets.

Effective May 1, the Kokomo plant will be known as the Delco Radio division, and will operate as a subsidiary of the G-M Delco-Remy division.

Ray C. Ellis, a member of the General Motors engineering staff, will be general manager of the new manufacturing department.

Output of the new factory will be sold to automobile-manufacturing sections of General Motors for installation as initial equipment of new cars, and to G-M dealers. The corporation will continue, however, to purchase a portion of its automobile radio requirements from outside manufacturers, Mr. Sloan states.

G-E Range Sales Show Gain of 2.8 Times

CLEVELAND — Sales of General Electric ranges during the first quarter of 1936 were 2.8 times the sales for the same period of the year previous, reports J. R. Poteat, range division manager.

From present indications, Mr. Poteat expects this year's estimates of range sales to be exceeded by a considerable amount. A larger number of utilities and dealers are now ordering in carloads lots, he said, whereas previously they have split carload orders.

As an example, Mr. Poteat cited Tide Water Power Co., of Wilmington, N. C., which, although in the range business for years, placed its first carload range order with G-E just recently.

Crosley Orders Doubled in New Jersey Area

NEWARK—Orders for Crosley refrigerators in New Jersey so far this year are more than double those for the same period a year ago, reports H. M. Bergman, sales manager, Apollo Distributing Co., Crosley distributor in this territory.

Ice Cream Cabinet & Beverage Cooler Sales Gain

(*Concluded from Page 1, Column 5*)

tabulation of household sales, with Pennsylvania second and California a very close third. Illinois was fourth, Ohio fifth, New Jersey sixth, and Texas seventh.

In sales of commercial units, outstanding records were made in the ice cream cabinet and self-contained bottled beverage cooling divisions.

Reporting household electric refrigerator sales to Nema during March were Apex, Crosley, Fairbanks-Morse, Frigidaire, General Electric, Gibson, Leonard, Kelvinator, Norge, Servel, Stewart-Warner, Sunbeam, Uniflow, Universal Cooler, and Westinghouse.

Companies reporting sales of commercial units included Brunner, Carrier, Crosley, Frigidaire, General Electric, Gibson, Kelvinator, Leonard, Merchant & Evans, Norge, Servel, Uniflow, Universal Cooler, Westinghouse, and York.

Rotogravure Features Westinghouse Range

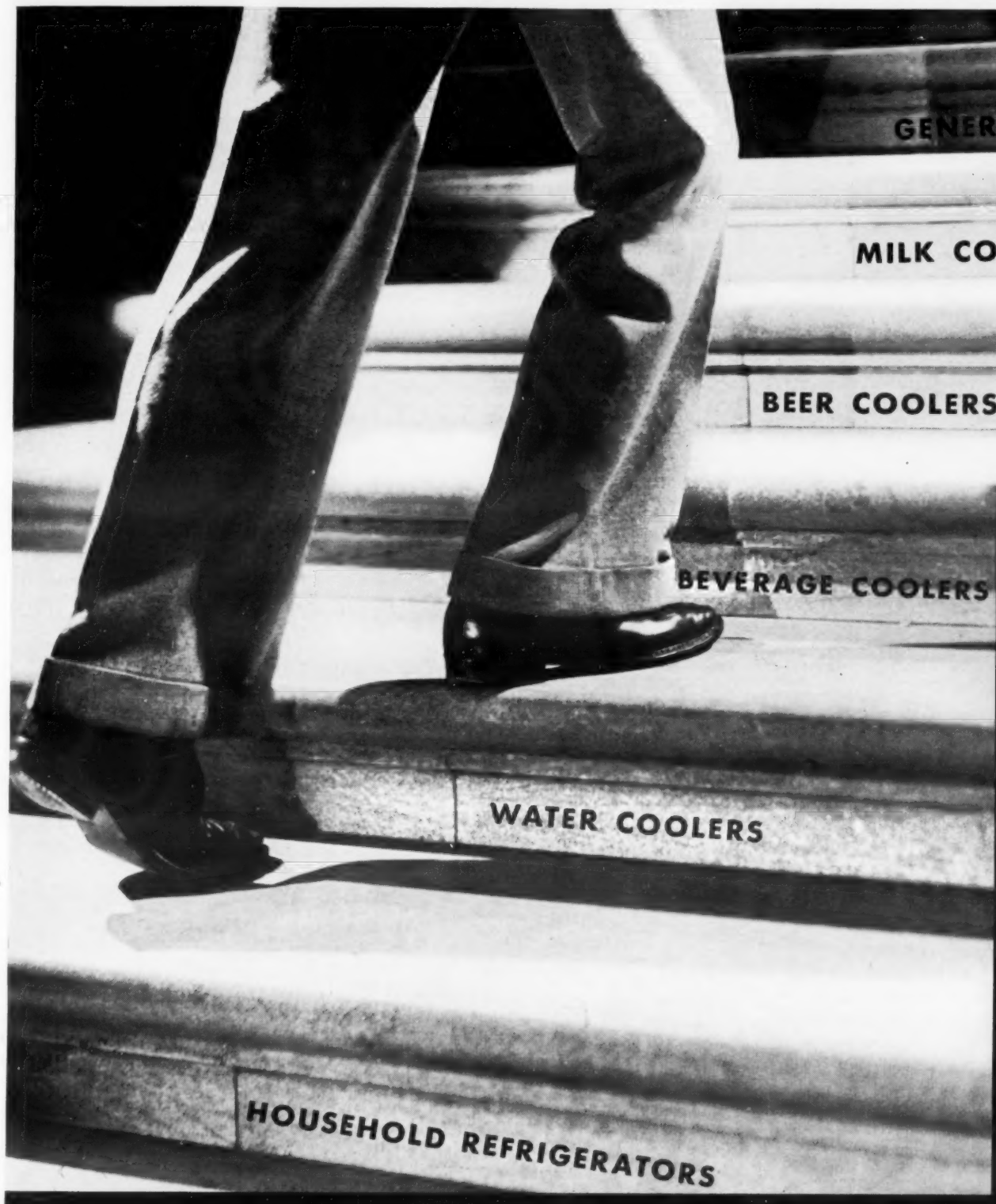
MANSFIELD—Perfect results, automatic control, cleanliness, and style and beauty, combined with cooking economy, are the advantages of electric range cooking as listed by Westinghouse in its new rotogravure booklet for prospective customers.

Westinghouse pictures its range as the first step toward an all-electric kitchen which will some day be contained in every home to "save the youth, health, and strength of home makers."

Charts of several cooking operations are designed to show the electricity saved by the Westinghouse "Economizer," a speed unit which automatically sets two heats, a high and a low. Individual illustrations show the dual automatic control, automatic oven illumination, lock-stop shelves, cigarette lighter, automatic minute-minder, portable econo-cooker, ebonite glazed units, dual economy ovens, swinging platform lights, and corox units.

"You save in roasting," "You save in baking," "You save on everyday foods," "You save healthful minerals," "Home canning is simplified," "You save time and money," "You feel safer with flame hazards removed," "You save long kitchen hours," "Your kitchen stays cooler all year 'round," are the selling points listed in this booklet to convince readers that the range will more than pay for itself.

A kitchen planning service, which inciudes measuring the kitchen, estimating the cost, and a special plan prepared and delivered, is explained.



GO UP
one step at a time!

A NEW EASY PLAN to get into Commercial Refrigeration

Refrigerator dealers! Now you can add commercial refrigeration to your present lines on the step-by-step plan. It's the *quick, easy* way to get into the commercial refrigeration business and DOUBLE OR TRIPLE your present profit opportunities!

You can start small and grow just as fast and big as you want. Back of you is the most complete commercial refrigeration dealer service in the entire industry to guide you every step of the way. With the unlimited help of your G-E refrigeration distributor and G-E commercial engineers, you cannot help but succeed!

General Electric will lead the way to Increased Profits!

• There are more General Electric Water Coolers sold than any other leading make! You, too, will find them easier to sell because of their many exclusive features, including the revolutionary *G-E Foot Pedal Control.* Stores, offices, garages, service stations, factories, schools, public buildings, hotels, hospitals, institutions, etc.—all are prospects. And the G-E Water Cooler is a package article like the household refrigerator—just as easy to handle, just as easy to finance, just as easy to install. Start your commercial refrigeration business with G-E Water Coolers. The big summer selling season is just ahead. *Now* is the time!

BACKED BY the complete General Electric commercial line—supported by the unmatched sales and service cooperation of G-E factory-trained commercial engineers, you can develop your markets *one at a time,* starting with

G-E WATER COOLERS—A package article, just like household refrigerators. Prospects everywhere. Quick, easy sales. With your water cooler business established you are ready for . . .

G-E BEVERAGE COOLERS—Another package article in real demand. Another quick money-making opportunity, leading to the next step . . .

BEER COOLERS—A Virgin Opportunity! And next . . .

G-E MILK COOLERS—A big farm market that has hardly been scratched! And then . . .

GENERAL COMMERCIAL REFRIGERATION...to give you a complete line with all its amazing opportunities for profit!

Find out now about the General Electric Easy Step Plan! Investigate the big possibilities in commercial refrigeration. Go over the complete G-E commercial line and dealer service program and see why General Electric leads the field in profit opportunities. Communicate with the G-E refrigeration distributor at once or write or wire direct for full details! General Electric Company, Commercial Refrigeration Div., Sec. DF5, Nela Park, Cleveland, Ohio.

GENERAL ELECTRIC
COMMERCIAL REFRIGERATION

SPECIFICATIONS OF COMMERCIAL CONDENSING UNITS

General Electric

General Electric Co.
Nela Park, Cleveland, Ohio.

Compressor—Balanced bellows shaft seal, stationary guide. Cylinder head cooled by fins cast on head. Splash-type lubricating system for all models through 5-hp size; pressure system on larger models. Oil level measured by plug on models through 5-hp. size; bull's eye on larger models.

Condenser—T models: shell and finned coil; W and S models: double tube, counterflow; L models: shell and tube; air-cooled models: multipass finned tubing. Location of condenser: T and L models, under chassis; W and S models, on chassis between compressor and motor; air-cooled models: on chassis opposite compressor and motor.

Liquid Receiver—Horizontal liquid receiver. All models except CMF-362A and D have fusible safety plug and all have refrigerant filter except CMF-42T and air-cooled models 1 hp. or smaller.

Materials Used — Cylinder block: semi-steel. Pistons: grey iron castings, except L models, semi-steel. Condenser tube: copper. Condenser shell: steel.

Controls—Penn back pressure control. All water-cooled models and CMF-52A and CMF-6A have high-pressure cutout. Thermal overload cutout. Condensing water flow controlled by Penn water regulating valve actuated by head pressure.

Valves—Ring-type in valve plate intake valve, reed-type on valve plate discharge valve.

Special Features—Thermal overload cutout incorporated in back-pressure control on CMF-362A and D. Fan and cowling integral on CMF-362A and D. Shrouds on all condensers. T models have liquid level indicator mounted in condenser-receiver.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
CMF-362A	310	2,650	360	2,000	410	1,560	460	1,140	¼	2	1½ x 1⅜	10	3 lbs.	Freon	Air	Open	Reciprocating	V-Belt	18 oz.	21⅜ x 19¾ x 16⅜
CMF-362D	410	3,330	460	2,460	520	1,930	580	1,420	⅓	2	1½ x 1⅜	10	3 lbs.	Freon	Air	Open	Reciprocating	V-Belt	18 oz.	21⅜ x 17¾ x 16⅞
CMF-42A	400	5,550	480	4,300	540	3,370	610	2,480	½	2	1¾ x 1⅝	15	4¼ lbs.	Freon	Air	Open	Reciprocating	V-Belt	3¼ pts.	28½ x 22½ x 21½
CMF-52A	330	9,250	380	6,950	420	5,300	470	3,900	¾	2	2 x 2½	28	7¾ lbs.	Freon	Air	Open	Reciprocating	V-Belt	5¼ pts.	35⅞ x 24¾ x 25¼
CMF-52A	410	10,900	490	8,500	550	6,650	620	4,900	1	2	2 x 2½	28	7¾ lbs.	Freon	Air	Open	Reciprocating	V-Belt	5¼ pts.	35⅞ x 24¾ x 25¼
CMF-6A	...	...	275	11,200	300	8,980	300	6,370	1½	2	2½ x 3½	21	1 lb.	Freon	Air	Open	Reciprocating	V-Belt	8¼ pts.	36 x 22⅝ x 30¾
CMF-6A	300	16,300	375	14,200	400	11,350	400	8,260	2	2	2½ x 3½	21	1 lb.	Freon	Air	Open	Reciprocating	V-Belt	8¼ pts.	36 x 22⅞ x 30¾
CMF-42T	...	...	...	...	...	...	460	2,200	⅓	2	1¾ x 1⅝	12	4¼ lbs.	Freon	Water	Open	Reciprocating	V-Belt	3¼ pts.	28½ x 16⅞ x 20¾
CMF-42T	480	7,550	540	5,620	610	4,240	680	3,200	½	2	1¾ x 1⅝	12	4¼ lbs.	Freon	Water	Open	Reciprocating	V-Belt	3¼ pts.	28½ x 16⅞ x 20¾
CMF-42T	610	9,500	610	6,300	...	...	...	...	¾	2	1¾ x 1⅝	12	4¼ lbs.	Freon	Water	Open	Reciprocating	V-Belt	3¼ pts.	28½ x 17⅜ x 20¾
CMF-5S	475	15,650*	435	9,750	475	7,600	475	5,250	1	2	2 x 2½	21	14 lbs.	Freon	Water	Open	Reciprocating	V-Belt	6¼ pts.	39 x 17¼ x 29¾
CMF-6W	...	...	300	15,000	325	11,400	325	7,900	1½	2	2½ x 3½	21	1 lb.	Freon	Water	Open	Reciprocating	V-Belt	8¼ pts.	39 x 17¼ x 30¾
CMF-6W	325	23,600	400	19,600	450	14,800	450	10,600	2	2	2½ x 3½	21	1 lb.	Freon	Water	Open	Reciprocating	V-Belt	8¼ pts.	39 x 17¾ x 30¾
CMF-8W	240	33,600	300	28,700	325	21,400	325	14,800	3	4	2½ x 3½	35	2 lbs.	Freon	Water	Open	Reciprocating	V-Belt	13 pts.	48 x 24 x 30⅜
CMF-8S	400	53,200	490	42,700	530	33,200	530	22,500	5	4	2½ x 3½	35	2 lbs.	Freon	Water	Open	Reciprocating	V-Belt	13 pts.	48 x 24 x 30⅜
CMF-81L	490	69,000	555	51,000	615	38,600	615	25,400	5	4	2½ x 3½	70	2 lbs.	Freon	Water	Open	Reciprocating	V-Belt	13 pts.	55¾ x 24⅞ x 35¼
CMF-9L	515	115,000	575	83,000	625	62,300	625	39,800	7½	4	3¼ x 3¼	140	3 lbs.	Freon	Water	Open	Reciprocating	V-Belt	11 pts.	75 x 29¼ x 40¼
CMF-9L	575	126,000	690	99,700	690	68,000	690	43,100	10	4	3¼ x 3¼	125	3 lbs.	Freon	Water	Open	Reciprocating	V-Belt	11 pts.	75 x 29¼ x 40¼
CMF-10L	500	197,500	560	147,800	650	120,000	650	80,800	15	4	4 x 4	240	3 lbs.	Freon	Water	Open	Reciprocating	V-Belt	16 pts.	81⅝ x 33¾ x 46⅞
CMF-10L	650	256,000	650	170,000	...	...	...	...	20	4	4 x 4	200	3 lbs.	Freon	Water	Open	Reciprocating	V-Belt	16 pts.	82¼ x 33¾ x 46⅞

*Requires 1½-hp. motor.

Frigidaire

Frigidaire Corp., Dayton, Ohio.

Compressor—Bellows shaft seal. Cylinder head cooled by air. Models W-4-E, W-5-F, and W-6-G have water-cooled discharge valve plate. Splash-type lubricating system for all except models FW-70, FW80, and FW-85, which have force-feed type. Oil level measured by oil level plug on all but models FW-70, FW-80, and FW-85 which have sight glass. Type of compressor oil: mineral.

Condenser—Air-cooled models: fin tube. Water-cooled models: shell and tube. Location: (water cooled) below frame; (air cooled) on frame at back.

Valves—Disc intake and discharge.

Liquid Receiver—Horizontal type. All models except 1B, F-1-B, 1-C, and F-1-C have fusible safety plug. All models have refrigerant filter.

Controls—Frigidaire pressure control. All water-cooled models, and all air-cooled models ½ hp. and up have high pressure cutout. Thermo element overload cutout. Condensing water flow controlled by Frigidaire pressure regulating valve.

Materials Used—Cylinder block: semi-steel. Pistons: cast iron: Condenser tubing: air-cooled models, steel; water cooled, brass. Condenser shell: steel.

Model No.	Refrigeration Capacity* 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
1-B	385	2,022	485	1,540	600	1,083	...	...	¼	2	1½ x 17/16	13	3 lbs.	SO_2	Air	Open	Reciprocating	Belt	1¼ lbs.	17¼ x 15 x 14½
F-1-B	...	...	320	1,710	375	1,370	...	...	¼	2	1½ x 17/16	13	3 lbs.	Freon	Air	Open	Reciprocating	Belt	1¼ lbs.	17¼ x 15 x 14½
1-C	550	2,940	720	2,160	815	1,520	...	...	⅓	2	1½ x 17/16	13	3 lbs.	SO_2	Air	Open	Reciprocating	Belt	1¼ lbs.	17¼ x 16½ x 14½
F-1-C	350	2,722	430	2,180	555	1,940	...	...	⅓	2	1½ x 17/16	13	3 lbs.	Freon	Air	Open	Reciprocating	Belt	1¼ lbs.	17¼ x 16½ x 14½
2-C	325	3,377	405	2,325	470	1,805	...	...	½	2	1¾ x 1¾	20¼	3 lbs.	SO_2	Air	Open	Reciprocating	Belt	2 lbs.	28 x 21½ x 19⅛
F-1-CC	330	3,092	390	2,420	480	2,085	...	...	½	2	1½ x 17/16	20¼	3 lbs.	Freon	Air	Open	Reciprocating	Belt	2 lbs.	28 x 21½ x 19⅛
3-D	355	5,387	435	3,940	525	3,070	...	...	½	2	1¾ x 2½	20¼	3 lbs.	SO_2	Air	Open	Reciprocating	Belt	2 lbs.	28 x 23½ x 19⅛
F-2-D	360	5,345	440	4,260	510	3,440	...	...	½	2	1¾ x 1¾	20¼	3 lbs.	Freon	Air	Open	Reciprocating	Belt	2 lbs.	28 x 23½ x 19⅛
4-E	350	7,772	450	5,980	535	4,460	...	...	¾	2	2⅛ x 2⅝	35	5 lbs.	SO_2	Air	Open	Reciprocating	Belt	3 lbs.	32¾ x 26 x 22¼
F-3-E	340	7,360	415	5,920	500	5,000	...	...	¾	2	1¾ x 2½	35	5 lbs.	Freon	Air	Open	Reciprocating	Belt	2 lbs.	32¾ x 26 x 21⅛
5-F	350	10,587	425	7,830	530	6,230	...	...	1	2	2½ x 2⅝	35	5 lbs.	SO_2	Air	Open	Reciprocating	Belt	3 lbs.	33 x 27⅞ x 22½
F-4-F	345	11,470	385	8,650	450	7,180	...	...	1	2	2⅛ x 2⅝	35	5 lbs.	Freon	Air	Open	Reciprocating	Belt	3 lbs.	32¾ x 27¾ x 24¼
6-G	365	15,280	475	11,820	585	9,840	...	...	1½	2	2½ x 3½	35	5 lbs.	SO_2	Air	Open	Reciprocating	Belt	3 lbs.	32¾ x 27¾ x 22¼
F5G	340	14,350	430	12,210	510	10,620	...	...	1½	2	2½ x 2⅝	35	5 lbs.	Freon	Air	Open	Reciprocating	Belt	3 lbs.	32¾ x 27¾ x 22¼
6-H	465	19,227	575	14,800	705	11,800	...	...	2	2	2½ x 3½	48¾	8 lbs.	SO_2	Air	Open	Reciprocating	Belt	3 lbs.	36¾ x 32¼ x 24⅞
F-6-H	315	18,635	385	15,500	460	13,700	...	...	2	2	2½ x 3½	48¾	8 lbs.	Freon	Air	Open	Reciprocating	Belt	3 lbs.	36¾ x 32¼ x 24⅞
F-6-J	450	24,700	545	20,700	650	18,300	...	...	3	2	2½ x 3½	48¾	8 lbs.	Freon	Air	Open	Reciprocating	Belt	3 lbs.	36¾ x 32¼ x 24⅞
W-2-C	435	4,590	505	3,070	590	2,280	...	...	⅓	2	1¾ x 1¾	15¾	3 lbs.	SO_2	Water	Open	Reciprocating	Belt	2 lbs.	28 x 17½ x 18¾
FW-1-C	435	4,087	505	2,980	595	2,330	...	...	½	2	1½ x 17/16	15¾	3 lbs.	Freon	Water	Open	Reciprocating	Belt	2 lbs.	28 x 17½ x 18¾
W-3-D	425	6,482	505	4,580	605	3,435	...	...	½	2	1¾ x 2½	15¾	3 lbs.	SO_2	Water	Open	Reciprocating	Belt	2 lbs.	28 x 17½ x 19⅛
FW-2-D	430	6,522	505	4,850	600	4,080	...	...	½	2	1¾ x 1¾	15¾	3 lbs.	Freon	Water	Open	Reciprocating	Belt	2 lbs.	28 x 17½ x 19⅛
W-4-E	425	10,050	485	7,030	580	5,180	...	...	¾	2	2⅛ x 2⅝	25¾	5 lbs.	SO_2	Water	Open	Reciprocating	Belt	3 lbs.	32¾ x 19⅝ x 22½
FW-3-E	425	9,862	495	7,620	560	6,210	...	...	¾	2	1¾ x 2½	25¾	5 lbs.	Freon	Water	Open	Reciprocating	Belt	3 lbs.	32¾ x 19⅝ x 21⅛
W-5-F	425	15,165	510	10,440	600	7,980	...	...	1	2	2½ x 2⅝	32¾	5 lbs.	SO_2	Water	Open	Reciprocating	Belt	2 lbs.	32¾ x 19⅝ x 21⅛
FW-4-F	420	14,985	485	11,200	555	8,970	...	...	1	2	2⅛ x 2⅝	32¾	5 lbs.	Freon	Water	Open	Reciprocating	Belt	3 lbs.	36¾ x 19⅞ x 23
W-6-G	500	22,400	580	15,600	685	11,970	...	...	1½	2	2½ x 3½	32¾	5 lbs.	SO_2	Water	Open	Reciprocating	Belt	3 lbs.	36⅞ x 19⅞ x 25½
FW-5-G	460	24,025	505	17,400	580	14,080	...	...	1½	2	2½ x 2⅝	32¾	5 lbs.	Freon	Water	Open	Reciprocating	Belt	3 lbs.	36¾ x 19⅞ x 23
FW-6-H	415	28,825	455	20,800	500	16,000	...	...	2	2	2½ x 3½	57¼	8 lbs.	Freon	Water	Open	Reciprocating	Belt	3 lbs.	38½ x 22 x 27½
FW-6-J	590	40,400	655	29,500	755	24,000	...	...	3	2	2½ x 3½	57¼	8 lbs.	Freon	Water	Open	Reciprocating	Belt	3 lbs.	38½ x 23 x 27½
FW-70	750	65,500	750	42,000	...	...	...	...	5	2	3⅛ x 3⅛	65	8 lbs.	Freon	Water	Open	Reciprocating	Belt	8 lbs.	65 x 22¼ x 34½
FW-80	610	102,300	610	66,800	...	...	...	...	7½	4	3⅛ x 3⅛	65	12 lbs.	Freon	Water	Open	Reciprocating	Belt	8 lbs.	65 x 31 x 34½
FW-85	750	131,500	750	83,250	...	...	...	...	10	4	3⅛ x 3⅛	130	15 lbs.	Freon	Water	Open	Reciprocating	Belt	8 lbs.	66 x 31 x 34½

*Capacities given in B.t.u. per hour with suction gas pressures corresponding to temperature of 40°, 20°, or 5° and entering crankcase superheated to 90°. Ambient temperature 90°. Entering water for water-cooled units 80°.

Universal Cooler

Universal Cooler Corp., Detroit, Mich.

Compressor—Bellows and lubricated ring type shaft seal. Cylinder head cooled by air on all air-cooled models; water on all water-cooled models. Splash-type lubricating system. Oil level, visible sight in crankcase wall on models of ¾ hp. or larger. Smaller models, rule inserted in crankcase. Compressor oil, Suniso No. 4; viscosity, 280-300 at 100° F.

Condenser—Air-cooled models: continuous fin tube. Water-cooled models: double tube, counterflow principle. Condenser on base behind motor.

Liquid Receiver—Horizontal type. All models equipped with fusible safety plug and liquid line strainer.

Controls—Cutler-Hammer on models 25 and 33, Penn on other models through 1 hp.; Detroit Lubricator on models larger than 1 hp. Automatic low-pressure type on air-cooled units, dual control and high-pressure cutout on water-cooled units. Heater coil overload cutout. Condensing water flow controlled by head pressure. Penn valve on all but models W-1000 and W-1500, which use Electrimatic valve.

Valves—Swedish steel disc intake valves, discharge valves are disc type with secondary oil relief springs of stainless steel.

Materials Used—Cast semi-steel cylinder block. Cast iron pistons. Soft drawn copper condenser tubing.

Model No.	Refrigeration Capacity† 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
25	...	...	438	1,640	525	1,400	525	880	¼	2	1½ x 1¼	7.3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	1½ pts.	25¾ x 17½ x 19½
												10.6	3 lbs.	F-12						
33	265	3,275	333	2,750	387	2.125	387	1,325	⅓	2	1 13/16 x 1½	7.3	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	1¾ pts.	25¾ x 17½ x 21⅜
												10.6	5½ lbs.	F-12						
W-33	310	4,725	365	3,575	407	2,960	407	2,075	⅓	2	1 13/16 x 1½	7.3	3½ lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	1¾ pts.	25¾ x 17½ x 21⅜
												10.6	5½ lbs.	F-12						
50	265	4,575	335	3,900	430	3,300	430	2,300	½	2	2¼ x 1½	8.37	4 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	2 pts.	32 x 19⅛ x 22¼
												12.1	6 lbs.	F-12						
W-50	330	7,000	385	5,350	460	4,175	460	3,000	½	2	2¼ x 1½	8.37	4½ lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	2 pts.	32 x 19⅛ x 22¼
												12.1	7 lbs.	F-12						
75	280	6,500	348	5,650	420	4,400	420	3,150	¾	2	2¼ x 2	8.37	4½ lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	3 pts.	32 x 19⅛ x 24⅝
												12.1	7 lbs.	F-12						
W-75	350	10,350	415	8,150	515	7,025	515	4,600	¾	2	2¼ x 2	8.37	5 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	3 pts.	32 x 19⅛ x 24⅝
												12.1	7½ lbs.	F-12						
100	240	9,600	300	7,800	365	7,000	365	4,900	1	2	2¼ x 3	15.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 24¾ x 29¼
												22	12 lbs.	F-12						
W-100	300	14,400	370	10,850	420	9,000	420	6,400	1	2	2¼ x 3	15.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 24¾ x 29¼
												22	12 lbs.	F-12						
150	290	15,200	365	12,600	425	10,600	425	6,650	1½	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30¾
												22	12 lbs.	F-12						
W-150	365	21,500	420	15,950	475	13,500	475	9,750	1½	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30
												22	12 lbs.	F-12						
200	380	18,600	475	15,000	535	12,600	535	8,900	2	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30¾
												22	12 lbs.	F-12						
W-200	475	28,125	540	22,275	640	17,050	640	11,900	2	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30
												22	12 lbs.	F-12						
W-300	455	35,950	550	30,750	640	25,750	640	18,750	3	3	2½ x 3	27.8	12 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	7½ pts.	52½ x 24¾ x 32½
												40	14 lbs.	F-12						
W-500	460	64,000	550	50,150	618	41,300	618	29,650	5	3	3¼ x 3	27.8	5 lbs.*	CH_3Cl	Water	Open	Reciprocating	V-Belt	7½ pts.	52½ x 24¾ x 33
												40	5 lbs.*	F-12						
W-750	365	101,250	440	84,750	505	73,500	505	52,500	7½	3	4 x 4¼	47	8 lbs.*	CH_3Cl	Water	Open	Reciprocating	V-Belt	12 pts.	58¾ x 32⅝ x 39½
												68	8 lbs.*	F-12						
W-1000	440	129,750	510	102,500	570	79,750	570	57,900	10	3	4 x 4¼	47	8 lbs.*	CH_3Cl	Water	Open	Reciprocating	V-Belt	12 pts.	58¾ x 32⅝ x 39½
												68	8 lbs.*	F-12						
W-1500	570	169,500	570	110,500	...	...	...	...	15	3	4 x 4¼	47	8 lbs.*	CH_3Cl	Water	Open	Reciprocating	V-Belt	12 pts.	58¾ x 32⅝ x 41¼
												68	8 lbs.*	F-12						

†Speeds and capacities listed are for methyl chloride charged units only. *Holding charge.

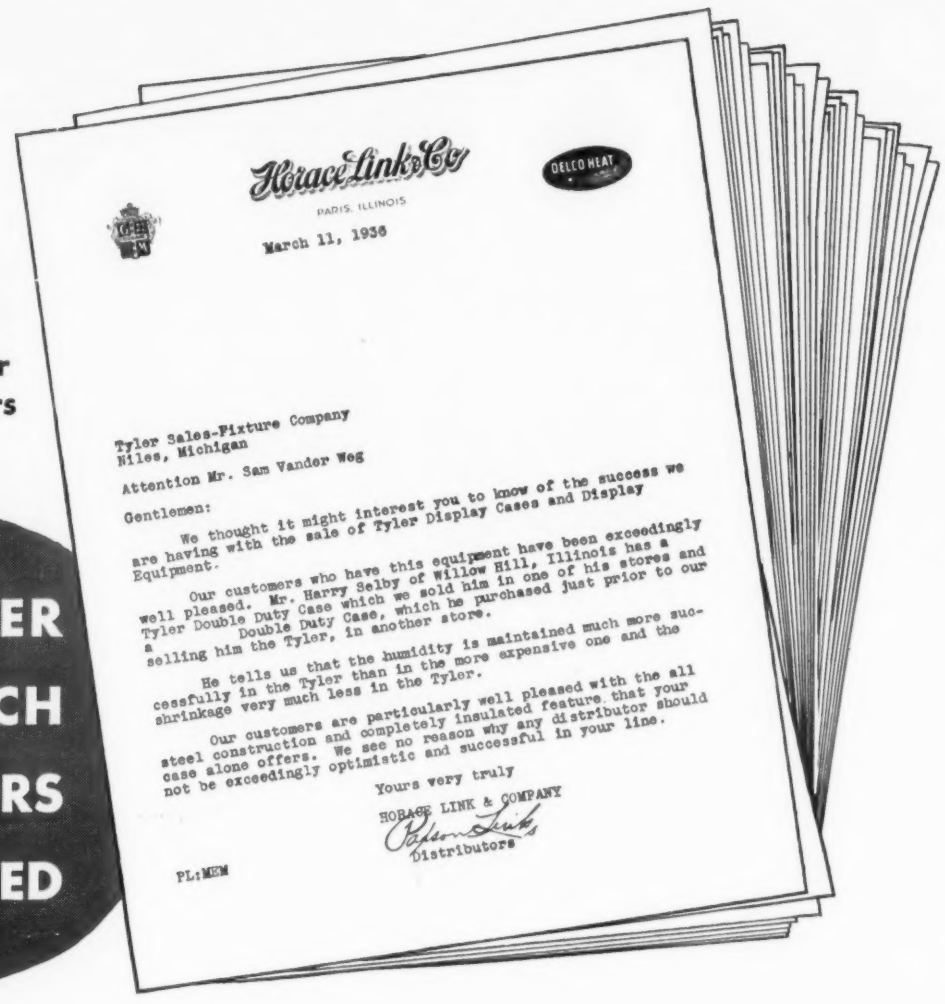
Tyler WELDED STEEL CASES

The Commercial Sensation of the Year

CASES COME COMPLETE WITH COILS – TRIPLE GLASS – 3" INSULATION

READ THIS LETTER

from one of our 300 distributors



Horace Link & Co
PARIS, ILLINOIS
DELCO HEAT

March 11, 1936

Tyler Sales-Fixture Company
Niles, Michigan

Attention Mr. Sam Vander Weg

Gentlemen:

We thought it might interest you to know of the success we are having with the sale of Tyler Display Cases and Display Equipment.

Our customers who have this equipment have been exceedingly well pleased. Mr. Harry Selby of Willow Hill, Illinois has a Tyler Double Duty Case which we sold him in one of his stores and a Double Duty Case, which he purchased just prior to our selling him the Tyler, in another store.

He tells us that the humidity is maintained much more successfully in the Tyler than in the more expensive one and the shrinkage very much less in the Tyler.

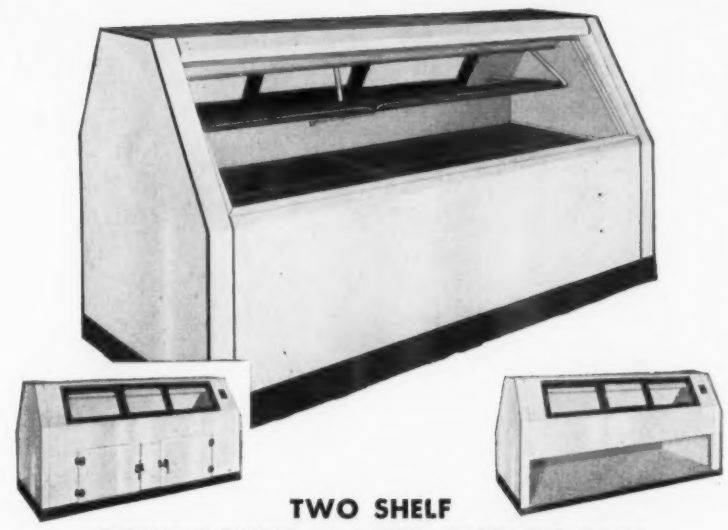
Our customers are particularly well pleased with the all steel construction and completely insulated feature that your case alone offers. We see no reason why any distributor should not be exceedingly optimistic and successful in your line.

Yours very truly

HORACE LINK & COMPANY
Distributors

PL:MEW

OVER 40 SUCH LETTERS RECEIVED



TWO SHELF
DOUBLE DUTY and TOP DISPLAY CASE

Available in 6′, 8′ and 10′ lengths.

ONE SHELF
DOUBLE DUTY and TOP DISPLAY CASE

Available in 6′, 8′ and 10′ lengths.

WHY THE PRICE IS SO LOW

Tyler has taken the Display Case out of the carpenter shop and placed it on the production line of a Modern Steel Products Plant. Instead of building two or twenty old style Cases at a time, with old style materials and methods, Tyler has applied the same mass production to this item that has been used on the Famous Tyler Steel Fish Cases and Tyler Steel Produce Fixtures.

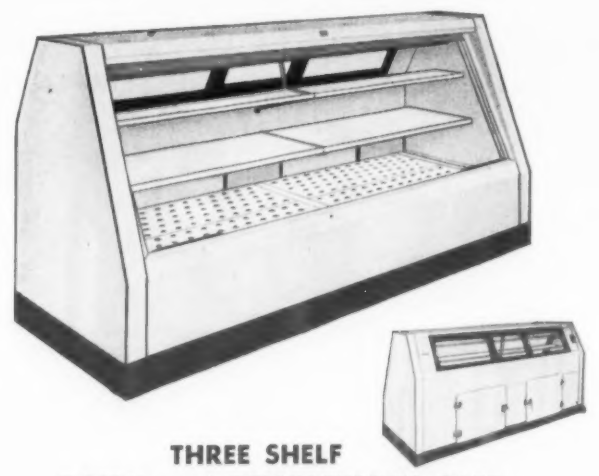
A constant flowing production with standardization of methods, materials and designs obviously results in large savings in costs.

These benefits are passed on to the trade in the form of higher quality, greater beauty and lower prices

Hundreds in Successful Operation

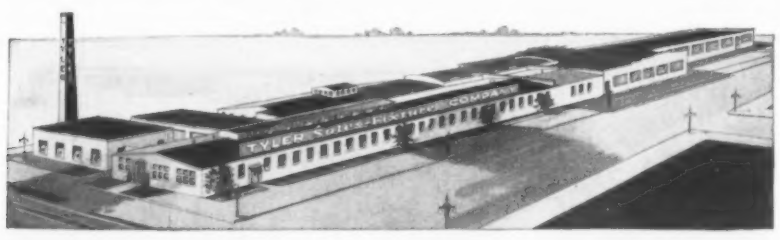
The Tyler Welded Steel Refrigerator Case was first offered to the trade in May, 1935, after three years of intensive engineering research and development. During the last twelve months hundreds of Cases have been placed in operation by leading Food Markets in all parts of the country.

Although many of these Cases are subjected to the most severe conditions, there has never been a complaint on Case Operation. We are proud of this record. This success in the field in actual use confirms proof of superiority found in exhaustive laboratory tests. A complete illustrated folder covering scientific tests conducted on these Cases will be gladly sent upon your request.



THREE SHELF
DAIRY and DELICATESSEN CASE

Available in 6′, 8′ and 10′ lengths.



Modern Plant a Model of Efficiency

Above is shown a view of the Tyler plant in Niles which extends over two full city blocks. Probably the most modern of all store fixture factories, this one-story plant is well lighted and properly ventilated. Production flows smoothly. There are sidings for carload shipments, a spacious power plant and boiler room, large rooms for fabrication and assembly, a finishing department with modern drying equipment, a porcelain enamel plant, all with modern methods and conveying systems. Over half of this beautiful plant has been built within the last two years, the last addition being a spacious building to house the general offices.

GENERAL SPECIFICATIONS

Refer to cross section view at right for principal specifications. Built by expert craftsmen of Steel Products, Tyler General Service Cases are the last word in beauty, strength and durability; chiefly of 18-gauge galvanneal rust-proof steel electrically welded and all seams and corners acetylene welded. Tyler Cases come complete with Coils. Interior above platters on all Tyler Cases Vitreous Porcelain Enamel; standard exterior finish White Dulux with Black trim. Genuine Vitreous PORCELAIN exterior available as shown in extras.

Standard Case glazed with 3/16" clear crystal glass.

FEATURES

Molded rubber sliding doors with double glass, equipped with stops to eliminate chance of pinched fingers.

Plain tube coil, twin type, under display shelf for diffusing cold and maintaining high relative humidity.

Insulated drain baffle under top coil specially designed to give perfect air circulation.

Sectional lower coil drain baffle providing perfect air circulation. Removable for cleaning.

Double duty drain at rear of case facilitating making plumbing connection and cleaning case.

Breaker strips around all doors eliminating inside to outside contact in case.

All steel construction, electric and acetylene welded. Old style wood cases warp, rot out, and become unsanitary.

Three glasses sealed in live rubber. Assembled in air conditioned room. Silica Gel between glasses. Perfect visibility.

Six tube high quality fin coil designed and built specifically for this case.

Beautiful built-in light hood taking standard bulbs. Top of glass frosted to eliminate reflection.

Outside finish standard case sparkling, durable, high-baked Dulux. Vitreous porcelain at small optional charge.

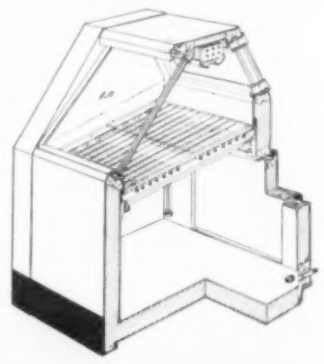
Interior above platters white vitreous porcelain. Bright, spotless tin finished wire shelves.

Black, sanitary base, rigid, durable. Won't show toe marks. Easy on floor. Kickproof.

Connections between top and lower coil neatly arranged out of sight with bright tubing in front corner of case.

Special Armstrong quality, insulation 3" thick in bottom and walls; sealed against moisture with Hydrolene.

Lower door on Double Duty strong, durable, beautifully designed with heavy chrome plated hardware.



WRITE FOR CATALOG AND DISTRIBUTOR'S PROPOSITION

TYLER Sales-Fixture CO. NILES, MICH.

TYLER TREASURE ISLAND SALES FIXTURES

Kelvinator

Kelvinator Corp., Detroit, Mich.

Compressor—Sylphon bellows shaft seal. Cylinder head cooled by air on ¼-hp. models, by water on "W" models, by refrigerant on all others. Oil bath and splash-type lubricating system. Oil level measured by measuring rod. Special Kelvinator oil.

Condenser—Air and refrigerant-cooled models: continuous fin tube. Water-cooled models; shell and coil. Models 10 hp and larger, shell and tube. Location of condenser: under base.

Material Used—Cylinder block and pistons, cast iron. Condenser tubing, copper. Condenser shell, steel.

Liquid Receiver—Horizontal type. All models have fusible safety plug except W models 5 hp. and larger which have relief valve. All models have refrigerant filter.

Valves—Reed intake and discharge valves.

Controls—Kelvinator pressure. All models larger than ¼ hp. have high pressure cutout. Thermal overload cutout. Condensing water flow controlled by head pressure. Kelvinator water regulating valve.

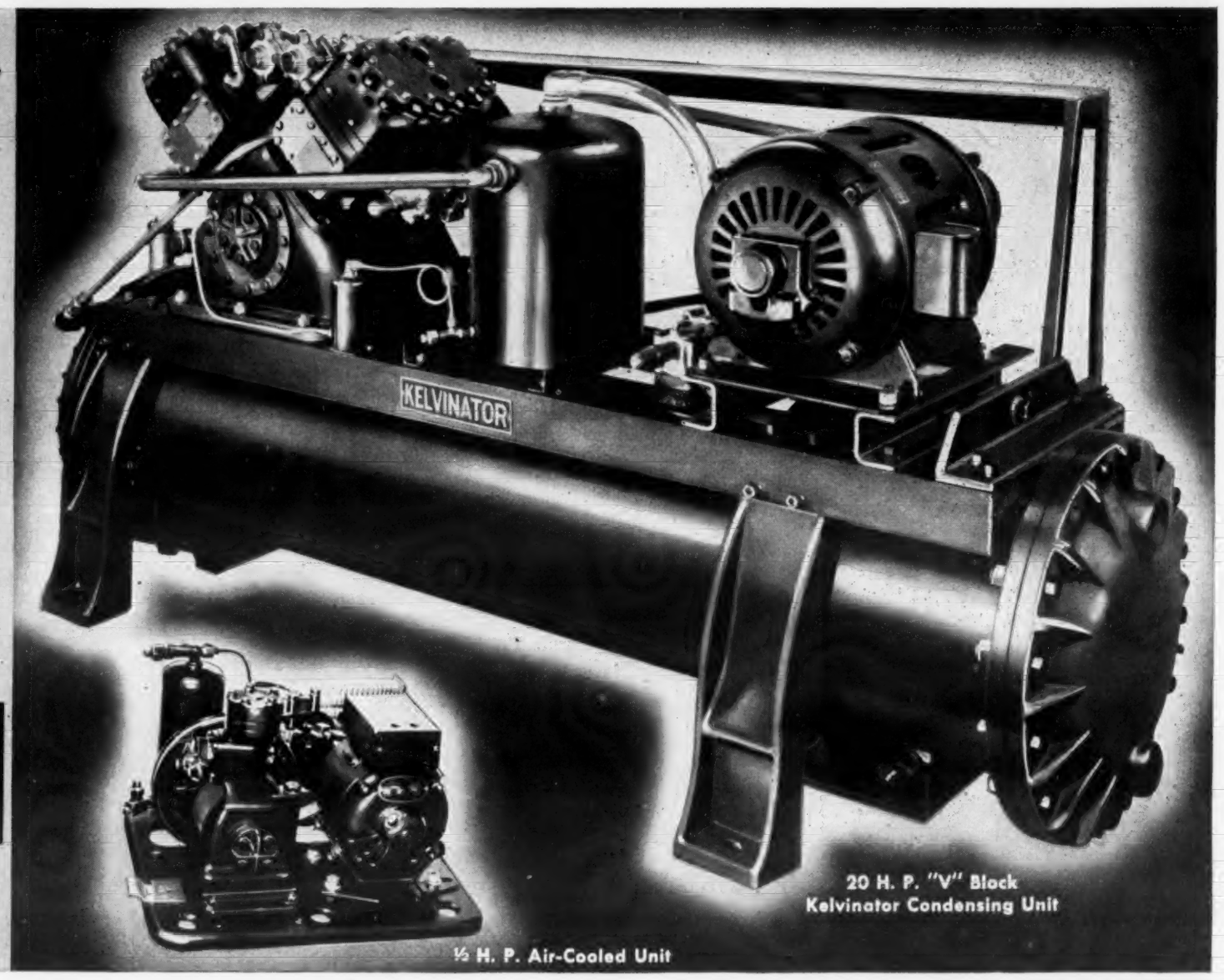
Special Features—All models have both intake and discharge valves in cylinder head.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
B-125-H	...	...	...	...	640	1,040	...	...	¼	2	1¼ x 1½	8.7	4 lbs.	SO_2	Air	Open	Reciprocating	Belt	1.7 pts.	19⅜ x 16 x 15¾
G-133-H	...	...	...	...	575	1,620	...	...	⅓	2	1½ x 1¾	10.6	5 lbs.	SO_2	Air	Open	Reciprocating	Belt	2.1 pts.	21⅜ x 17 x 17¾
F-150-H	...	...	...	...	450	2,630	...	...	½	2	1 13/16 x 2½	24	6 lbs.	SO_2	Air	Open	Reciprocating	Belt	2.4 pts.	29⅜ x 18⅞ x 21½
F-175	...	...	...	...	540	3,250	...	...	¾	2	1 13/16 x 2½	34	8 lbs.	SO_2	Air	Open	Reciprocating	Belt	2.4 pts.	38¾ x 21⅜ x 25
R-1100	...	...	...	...	330	4,600	...	...	1	2	2¼ x 3½	34	8 lbs.	SO_2	Air	Open	Reciprocating	Belt	3.6 pts.	40¾ x 22⅛ x 26⅝
R-1150	...	...	...	...	490	6,850	...	...	1½	2	2¼ x 3½	34	12 lbs.	SO_2	Air	Open	Reciprocating	Belt	3.6 pts.	40¾ x 22⅛ x 26⅝
B-125	...	...	525	1,530*	...	...	...	...	¼	2	1¼ x 1½	9	4 lbs.	SO_2	Air	Open	Reciprocating	Belt	1.62 pts.	19⅞ x 15¾ x 15¾
B-133	...	...	640	1,900*	...	...	...	...	⅓	2	1¼ x 1½	20	5 lbs.	SO_2	Air	Open	Reciprocating	Belt	1.62 pts.	25 x 17⅛ x 18⅞
G-133	...	...	490	2,500*	...	...	...	...	⅓	2	1½ x 1¾	20	5 lbs.	SO_2	Air	Open	Reciprocating	Belt	2 pts.	25½ x 17⅜ x 19⅛
H-150	...	...	550	3,750*	...	...	...	...	½	2	1 1/16 x 2	23	6 lbs.	SO_2	Air	Open	Reciprocating	Belt	2 pts.	28 x 19⅛ x 19⅝
F-175	...	...	550	5,700*	...	...	...	...	¾	2	1 13/16 x 2½	38	8 lbs.	SO_2	Air	Open	Reciprocating	Belt	3.25 pts.	30¾ x 22 x 22⅜
K-1100	...	...	490	7,550*	...	...	...	...	1	2	2¼ x 2½	44	8 lbs.	SO_2	Air	Open	Reciprocating	Belt	3.75 pts.	35½ x 23⅝ x 22½
R-1150	...	...	550	12,200*	...	...	...	...	1½	2	2¼ x 3½	70	12 lbs.	SO_2	Air	Open	Reciprocating	Belt	4 pts.	40⅝ x 24⅞ x 27½
Y-1200	...	...	440	14,400*	...	...	...	...	2	2	2¾ x 3½	70	12 lbs.	SO_2	Air	Open	Reciprocating	Belt	5 pts.	40⅝ x 28 x 27⅝
T-1300	...	...	440	23,100*	...	...	...	...	3	2	3¼ x 4	98	15 lbs.	SO_2	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
B-225	465	2,320	...	...	...	...	...	...	¼	2	1¼ x 1½	9	4 lbs.	SO_2	Air	Open	Reciprocating	Belt	1.62 pts.	19⅞ x 15¾ x 15¾
B-233	575	2,900	...	...	...	...	...	...	⅓	2	1¼ x 1½	20	5 lbs.	SO_2	Air	Open	Reciprocating	Belt	1.62 pts.	25 x 17⅛ x 18⅞
G-233	455	3,900	...	...	...	...	...	...	⅓	2	1½ x 1¾	20	5 lbs.	SO_2	Air	Open	Reciprocating	Belt	2 pts.	25½ x 17⅜ x 19⅛
H-250	490	5,650	...	...	...	...	...	...	½	2	1 1/16 x 2	23	6 lbs.	SO_2	Air	Open	Reciprocating	Belt	2 pts.	28 x 19⅛ x 19⅝
F-275	490	8,800	...	...	...	...	...	...	¾	2	1 13/16 x 2½	38	8 lbs.	SO_2	Air	Open	Reciprocating	Belt	3.25 pts.	30¾ x 22 x 22⅜
K-2100	440	11,650	...	...	...	...	...	...	1	2	2¼ x 2½	44	8 lbs.	SO_2	Air	Open	Reciprocating	Belt	3.75 pts.	35½ x 23⅝ x 22½
R-2150	440	16,150	...	...	...	...	...	...	1½	2	2¼ x 3½	70	12 lbs.	SO_2	Air	Open	Reciprocating	Belt	4 pts.	40⅝ x 24⅞ x 27½
Y-2200	400	22,550	...	...	...	...	...	...	2	2	2¾ x 3½	70	12 lbs.	SO_2	Air	Open	Reciprocating	Belt	5 pts.	40⅝ x 28 x 27⅝
T-2300	400	36,200	...	...	...	...	...	...	3	2	3¼ x 4	98	15 lbs.	SO_2	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
BL-325	...	...	...	...	...	...	465	930	¼	2	1¼ x 1½	6	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1.6 pts.	19⅞ x 15¾ x 15¾
BL-333	...	...	...	...	...	...	525	1,050	⅓	2	1¼ x 1½	13	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1.6 pts.	25 x 17⅛ x 18⅞
GL-333	...	...	...	...	...	...	455	1,600	⅓	2	1½ x 1¾	13	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	25½ x 17⅜ x 19⅛
HL-350	...	...	...	...	...	...	490	2,400	½	2	1 1/16 x 2	15	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	28 x 19⅛ x 19⅝
FL-375	...	...	...	...	...	...	490	3,550	¾	2	1 13/16 x 2½	25	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3.25 pts.	30¾ x 22 x 22⅜
KL-3100	...	...	...	...	...	...	440	4,650	1	2	2¼ x 2½	29	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3.75 pts.	35½ x 23⅝ x 22½
RL-3150	...	...	...	...	...	...	480	7,500	1½	2	2¼ x 3½	46	9 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	40⅝ x 24⅞ x 27½
YL-3200	...	...	...	...	...	...	400	9,300	2	2	2¾ x 3½	46	9 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	40⅝ x 28 x 27⅝
TL-3300	...	...	...	...	...	...	400	14,900	3	2	3¼ x 4	65	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
TL-3500	...	...	...	...	...	...	550	20,300	5	2	3¼ x 4	65	.. lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
B-325	...	...	415	1,630*	...	...	...	...	¼	2	1¼ x 1½	6	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1.62 pts.	19⅞ x 15¾ x 15¾
B-333	...	...	465	1,900*	...	...	...	...	⅓	2	1¼ x 1½	13	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1.6 pts.	25 x 17⅛ x 18⅞
G-333	...	...	410	2,900*	...	...	...	...	⅓	2	1½ x 1¾	13	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	25½ x 17⅜ x 19⅛
H-350	...	...	455	4,400*	...	...	...	...	½	2	1 1/16 x 2	15	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	28 x 19⅛ x 19⅝
F-375	...	...	440	6,400*	...	...	...	...	¾	2	1 13/16 x 2½	25	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3.25 pts.	30¾ x 22 x 22⅜
K-3100	...	...	400	8,650*	...	...	...	...	1	2	2¼ x 2½	29	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3.75 pts.	35½ x 23⅝ x 22½
R-3150	...	...	400	12,550*	...	...	...	...	1½	2	2¼ x 3½	46	9 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	40⅝ x 24⅞ x 27½
Y-3200	...	...	375	17,150*	...	...	...	...	2	2	2¾ x 3½	46	9 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	40⅝ x 28 x 27⅝
T-3300	...	...	330	24,100*	...	...	...	...	3	2	3¼ x 4	65	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
T-3500	...	...	440	32,000*	...	...	...	...	5	2	3¼ x 4	65	.. lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
B-433	415	2,850	...	...	...	...	...	...	⅓	2	1¼ x 1½	13	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1.6 pts.	25 x 17⅛ x 18⅞
G-433	315	3,400	...	...	...	...	...	...	⅓	2	1½ x 1¾	13	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	25½ x 17⅜ x 19⅛
H-450	340	5,000	...	...	...	...	...	...	½	2	1 1/16 x 2	15	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	28 x 19⅛ x 19⅝
F-475	330	7,450	...	...	...	...	...	...	¾	2	1 13/16 x 2½	25	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3.25 pts.	30¾ x 22 x 22⅜
K-4100	310	10,300	...	...	...	...	...	...	1	2	2¼ x 2½	29	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3.75 pts.	35½ x 23⅝ x 22½
R-4150	310	14,300	...	...	...	...	...	...	1½	2	2¼ x 3½	46	9 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	40⅝ x 24⅞ x 27½
Y-4200	280	20,550	...	...	...	...	...	...	2	2	2¾ x 3½	46	9 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	40⅝ x 28 x 27⅝
T-4300	280	33,100	...	...	...	...	...	...	3	2	3¼ x 4	65	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
T-4500	375	44,200	...	...	...	...	...	...	5	2	3¼ x 4	65	.. lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
BL-525	...	...	...	...	...	...	465	1,150	¼	2	1¼ x 1½	9	4 lbs.	Freon	Air	Open	Reciprocating	Belt	1.6 pts.	19⅞ x 15¾ x 15¾
BL-533	...	...	...	...	...	...	525	1,300	⅓	2	1¼ x 1½	19	5 lbs.	Freon	Air	Open	Reciprocating	Belt	1.6 pts.	25 x 17⅛ x 18⅞
GL-533	...	...	...	...	...	...	455	1,900	⅓	2	1½ x 1¾	19	5 lbs.	Freon	Air	Open	Reciprocating	Belt	2 pts.	25½ x 17⅜ x 19⅛
HL-550	...	...	...	...	...	...	490	2,850	½	2	1 1/16 x 2	22	6 lbs.	Freon	Air	Open	Reciprocating	Belt	2 pts.	28 x 19⅛ x 19⅝
FL-575	...	...	...	...	...	...	490	4,300	¾	2	1 13/16 x 2½	36	8 lbs.	Freon	Air	Open	Reciprocating	Belt	3.25 pts.	30¾ x 22 x 22⅜
KL-5100	...	...	...	...	...	...	440	5,600	1	2	2¼ x 2½	41	8 lbs.	Freon	Air	Open	Reciprocating	Belt	3.75 pts.	35½ x 23⅝ x 22½
RL-5150	...	...	...	...	...	...	480	8,700	1½	2	2¼ x 3½	67	12 lbs.	Freon	Air	Open	Reciprocating	Belt	4 pts.	40⅝ x 24⅞ x 27½
YL-5200	...	...	...	...	...	...	400	11,050	2	2	2¾ x 3½	67	12 lbs.	Freon	Air	Open	Reciprocating	Belt	5 pts.	40⅝ x 28 x 27⅝
TL-5300	...	...	...	...	...	...	400	17,700	3	2	3¼ x 4	94	15 lbs.	Freon	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
TL-5500	...	...	...	...	...	...	550	24,200	5	2	3¼ x 4	94	.. lbs.	Freon	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
B-525	...	...	415	1,880*	...	...	...	...	¼	2	1¼ x 1½	9	4 lbs.	Freon	Air	Open	Reciprocating	Belt	1.62 pts.	19⅞ x 15¾ x 15¾
B-533	...	...	465	2,200*	...	...	...	...	⅓	2	1¼ x 1½	19	5 lbs.	Freon	Air	Open	Reciprocating	Belt	1.62 pts.	25 x 17⅛ x 18⅞
G-533	...	...	410	3,350*	...	...	...	...	⅓	2	1½ x 1¾	19	5 lbs.	Freon	Air	Open	Reciprocating	Belt	2 pts.	25½ x 17⅜ x 19⅛
H-550	...	...	455	4,900*	...	...	...	...	½	2	1 1/16 x 2	22	6 lbs.	Freon	Air	Open	Reciprocating	Belt	2 pts.	28 x 19⅛ x 19⅝
F-575	...	...	440	7,350*	...	...	...	...	¾	2	1 13/16 x 2½	36	8 lbs.	Freon	Air	Open	Reciprocating	Belt	3.25 pts.	30¾ x 22 x 22⅜
K-5100	...	...	400	9,900*	...	...	...	...	1	2	2¼ x 2½	41	8 lbs.	Freon	Air	Open	Reciprocating	Belt	3.75 pts.	35½ x 23⅝ x 22½
R-5150	...	...	400	14,200*	...	...	...	...	1½	2	2¼ x 3½	67	12 lbs.	Freon	Air	Open	Reciprocating	Belt	4 pts.	40⅝ x 24⅞ x 27½
Y-5200	...	...	375	19,550*	...	...	...	...	2	2	2¾ x 3½	67	12 lbs.	Freon	Air	Open	Reciprocating	Belt	5 pts.	40⅝ x 28 x 27⅝
T-5300	...	...	330	27,700*	...	...	...	...	3	2	3¼ x 4	94	15 lbs.	Freon	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
T-550	...	...	440	36,800*	...	...	...	...	5	2	3¼ x 4	94	.. lbs.	Freon	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
B-633	415	2,950	...	...	...	...	...	...	⅓	2	1¼ x 1½	19	5 lbs.	Freon	Air	Open	Reciprocating	Belt	1.62 pts.	25 x 17⅛ x 18⅞
G-633	315	3,800	...	...	...	...	...	...	⅓	2	1½ x 1¾	19	5 lbs.	Freon	Air	Open	Reciprocating	Belt	2 pts.	25½ x 17⅜ x 19⅛
H-650	340	5,600	...	...	...	...	...	...	½	2	1 1/16 x 2	22	6 lbs.	Freon	Air	Open	Reciprocating	Belt	2 pts.	28 x 19⅛ x 19⅝
F-675	330	8,350	...	...	...	...	...	...	¾	2	1 13/16 x 2½	36	8 lbs.	Freon	Air	Open	Reciprocating	Belt	3.25 pts.	30¾ x 22 x 22⅜
K-6100	310	11,550	...	...	...	...	...	...	1	2	2¼ x 2½	41	8 lbs.	Freon	Air	Open	Reciprocating	Belt	3.75 pts.	35½ x 23⅝ x 22½
R-6150	310	15,900	...	...	...	...	...	...	1½	2	2¼ x 3½	67	12 lbs.	Freon	Air	Open	Reciprocating	Belt	4 pts.	40⅝ x 24⅞ x 27½
Y-6200	280	23,000	...	...	...	...	...	...	2	2	2¾ x 3½	67	12 lbs.	Freon	Air	Open	Reciprocating	Belt	5 pts.	40⅝ x 28 x 27⅝
T-6300	280	37,000	...	...	...	...	...	...	3	2	3¼ x 4	94	15 lbs.	Freon	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
T-6500	375	49,500	...	...	...	...	...	...	5	2	3¼ x 4	94	.. lbs.	Freon	Air	Open	Reciprocating	Belt	7 pts.	44½ x 26⅞ x 32¼
WG-133	...	...	640	3,325*	...	...	...	...	⅓	2	1½ x 1¾	12	5 lbs.	SO_2	Water	Open	Reciprocating	Belt	2 pts.	25⅝ x 14⅛ x 19⅛
WH-150	...	...	640	4,775*	...	...	...	...	½	2	1 1/16 x 2	14	6 lbs.	SO_2	Water	Open	Reciprocating	Belt	2 pts.	29 x 15⅜ x 19¼
WF-175	...	...	660	6,825*	...	...	...	...	¾	2	1 13/16 x 2½	22	8 lbs.	SO_2	Water	Open	Reciprocating	Belt	3.25 pts.	30¾ x 17¾ x 22⅜
WK-1100	...	...	600	10,250*	...	...	...	...	1	2	2¼ x 2½	25	8 lbs.	SO_2	Water	Open	Reciprocating	Belt	3.75 pts.	35½ x 18 x 22½
WR-1150	...	...	660	14,150*	...	...	...	...	1½	2	2¼ x 3½	35	12 lbs.	SO_2	Water	Open	Reciprocating	Belt	4 pts.	40⅝ x 20½ x 27½
WY-1200	...	...	550	16,850*	...	...	...	...	2	2	2¾ x 3½	35	12 lbs.	SO_2	Water	Open	Reciprocating	Belt	5 pts.	40⅝ x 20½ x 27⅝
WT-1300	...	...	480	25,750*	...	...	...	...	3	2	3¼ x 4	46	15 lbs.	SO_2	Water	Open	Reciprocating	Belt	7 pts.	45⅝ x 22⅝ x 32¼
WG-233	575	4,825	...	...	...	...	...	...	⅓	2	1½ x 1¾	12	5 lbs.	SO_2	Water	Open	Reciprocating	Belt	2 pts.	25⅝ x 14⅛ x 19⅛
WH-250	575	7,375	...	...	...	...	...	...	½	2	1 1/16 x 2	14	6 lbs.	SO_2	Water	Open	Reciprocating	Belt	2 pts.	29 x 15⅜ x 19¼
WF-275	600	10,925	...	...	...	...	...	...	¾	2	1 13/16 x 2½	22	8 lbs.	SO_2	Water	Open	Reciprocating	Belt	3.25 pts.	30¾ x 17¾ x 22⅜
WK-2100	550	15,925	...	...	...	...	...	...	1	2	2¼ x 2½	25	8 lbs.	SO_2	Water	Open	Reciprocating	Belt	3.75 pts.	35½ x 18 x 22½
WR-2150	600	21,925	...	...	...	...	...	...	1½	2	2¼ x 3½	35	12 lbs.	SO_2	Water	Open	Reciprocating	Belt	4 pts.	40⅝ x 20½ x 27½
WY-2200	480	24,950	...	...	...	...	...	...	2	2	2¾ x 3½	35	12 lbs.	SO_2	Water	Open	Reciprocating	Belt	5 pts.	40⅝ x 20½ x 27⅝
WT-2300	440	39,650	...	...	...	...	...	...	3	2	3¼ x 4	46	15 lbs.	SO_2	Water	Open	Reciprocating	Belt	7 pts.	45⅝ x 22⅝ x 32¼
WGL-333	...	...	...	...	...	...	490	2,000	⅓	2	1½ x 1¾	8	3½ lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	25⅝ x 14⅛ x 19⅛
WHL-350	...	...	...	...	...	...	575	4,075	½	2	1 1/16 x 2	9	4 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	29 x 15⅜ x 19¼
WFL-375	...	...	...	...	...	...	550	5,350	¾	2	1 13/16 x 2½	14	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3.25 pts.	30¾ x 17¾ x 22⅜
WKL-3100	...	...	...	...	...	...	490	8,200	1	2	2¼ x 2½	17	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3.75 pts.	35½ x 18 x 22½
WRL-3150	...	...	...	...	...	...	550	12,400	1½	2	2¼ x 3½	21	9 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	40⅝ x 20½ x 27½
WYL-3200	...	...	...	...	...	...	440	15,300	2	2	2¾ x 3½	21	9 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	40⅝ x 20½ x 27⅝
WTL-3300	...	...	...	...	...	...	440	21,800	3	2	3¼ x 4	30	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	45⅝ x 22⅝ x 32¼
WTL-3500	...	...	...	...	...	...	550	26,300	5	2	3¼ x 4	32	.. lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	56½ x 22⅝ x 32⅜

*Units rated with suction temperature of 18° F. †Units rated with suction temperature of 16° F. Air-cooled units rated in 90° F. ambient with suction gas superheated to 90° F. Water-cooled units rated with 75° F. inlet water, and 93° F. outlet water, with suction gas superheated to 75° F.

Kelvinator Specifications Concluded on Page 8

Exact Selection IS ANOTHER BIG REASON *why* KELVINATOR



Commercial Refrigeration Dealers *are in the* ENVIABLE PROFIT POSITION!

KELVINATOR Exact Selection Condensing Units enable Kelvinator dealers to fit each job *exactly,* from the most complete line of types and sizes. Each unit is expressly designed for maximum performance in its class of service.

SULPHUR DIOXIDE? Kelvinator has it!
METHYL CHLORIDE? Kelvinator has it!
FREON? Kelvinator has it!
SIZES? Kelvinator provides every size from the light ¼ h. p. to the big 20 h. p. units.
WATER COOLED OR AIR COOLED? Kelvinator makes them all!
PRESSURES? Kelvinator supplies both low-pressure equipment for sub freezing, and high-pressure units for water cooling or air conditioning, and, of course, medium pressure units for the average installation.

EXACT SELECTION is more than a phrase—it is a religion with Kelvinator. Exactly the right unit for every job! Never a compromise, to place its dealers at a price disadvantage or to jeopardize performance and customer satisfaction.

THE REFRIGERANT your customer wants!
THE EXACT SIZE he needs!
CORRECT PRESSURE to answer each temperature requirement!

THAT'S EXACT SELECTION — a big advantage that Kelvinator Commercial dealers enjoy.

DEALERS SELECT their own FRANCHISE

1. COMMERCIAL REFRIGERATION
The most complete line of condensing units and cooling units, plus a name that has stood for sound progress in temperature control since 1914.

2. LIQUID COOLING
A line of water cooling equipment second to none in the industry, and a popular, fast-moving line of Bottled Beverage Coolers.

3. AIR CONDITIONING
A complete line embracing every need, backed by Kelvinator experience. Separate franchise on Room Coolers, if the dealer prefers.

4. AUTOMATIC HEATING
Coal-burners as well as oil-burner units and complete boiler burners, to meet every requirement of homes, stores, and small apartment buildings.

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Perhaps you might qualify for one of these profitable franchises. Call your nearest Kelvinator distributor, or write direct to Kelvinator Corporation, Commercial Franchise Dept., Detroit, Mich.

KELVINATOR

Kelvinator (Continued)

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
WG-333	...	...	455	3,575*	...	...	...	...	⅓	2	1½ x 1¾	8	3½ lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	25⅝ x 14⅛ x 19⅛
WH-350	...	...	490	5,300*	...	...	...	...	½	2	1 11/16 x 2	9	4 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	29 x 15⅜ x 19¼
WF-375	...	...	490	7,175*	...	...	...	...	¾	2	1 13/16 x 2½	14	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3.25 pts.	30¾ x 17¾ x 22⅜
WK-3100	...	...	440	10,250*	...	...	...	...	1	2	2¼ x 2½	17	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3.75 pts.	35½ x 18 x 22½
WR-3150	...	...	480	15,000*	...	...	...	...	1½	2	2¼ x 3½	21	9 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	40⅝ x 20½ x 27½
WY-3200	...	...	400	19,775*	...	...	...	...	2	2	2¾ x 3½	21	9 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	40⅝ x 20½ x 27⅝
WT-3300	...	...	375	27,900*	...	...	...	...	3	2	3¼ x 4	30	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	45⅝ x 22⅝ x 32¼
WT-3500	...	...	480	36,700*	...	...	...	...	5	2	3¼ x 4	32	.. lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	56½ x 22⅝ x 32⅜
WU-3750	...	...	650	73,750*	...	...	...	...	7½	2	3⅝ x 4½	67	.. lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	67 x 30¾ x 39⅝
WV-31000	...	...	440	105,100*	...	...	...	...	10	4	3⅝ x 4½	110	.. lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	92⅛ x 28⅝ x 43⅜
WV-31500	...	...	650	147,500*	...	...	...	...	15	4	3⅝ x 4½	110	.. lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	92⅛ x 28⅝ x 43⅜
WG-433	365	4,650	...	...	...	...	...	...	⅓	2	1½ x 1¾	8	3½ lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	25⅝ x 14⅛ x 19⅛
WH-450	410	6,925	...	...	...	...	...	...	½	2	1 11/16 x 2	9	4 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	29 x 15⅜ x 19¼
WF-475	400	9,300	...	...	...	...	...	...	¾	2	1 13/16 x 2½	14	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3.25 pts.	30¾ x 17¾ x 22⅜
WK-4100	400	15,025	...	...	...	...	...	...	1	2	2¼ x 2½	17	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3.75 pts.	35½ x 18 x 22½
WR-4150	400	20,825	...	...	...	...	...	...	1½	2	2¼ x 3½	21	9 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	40⅝ x 20½ x 27½
WY-4200	375	26,975	...	...	...	...	...	...	2	2	2¾ x 3½	21	9 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	40⅝ x 20½ x 27⅝
WT-4300	300	35,950	...	...	...	...	...	...	3	2	3¼ x 4	30	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	45⅝ x 22⅝ x 32¼
WT-4500	440	50,700	...	...	...	...	...	...	5	2	3¼ x 4	32	.. lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	56½ x 22⅝ x 32⅜
WU-4750	485	89,850	...	...	...	...	...	...	7	2	3⅝ x 4½	67	.. lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	67 x 30¾ x 39⅝
WU-41000	650	116,350	...	...	...	...	...	...	10	2	3⅝ x 4½	90	.. lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	92⅛ x 28⅝ x 43⅜
WV-41500	485	180,000	...	...	...	...	...	...	15	4	3⅝ x 4½	110	.. lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	92⅛ x 28⅝ x 43⅜
WV-42000	650	232,500	...	...	...	...	...	...	20	4	3⅝ x 4½	200	.. lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	93¼ x 31 x 46
WGL-533	...	...	...	...	...	...	490	2,200	⅓	2	1½ x 1¾	12	5 lbs.	Freon	Water	Open	Reciprocating	Belt	2 pts.	25⅝ x 14⅛ x 19⅛
WHL-550	...	...	...	...	...	...	575	3,975	½	2	1 11/16 x 2	13	6 lbs.	Freon	Water	Open	Reciprocating	Belt	2 pts.	29 x 15⅜ x 19¼
WFL-575	...	...	...	...	...	...	550	4,875	¾	2	1 13/16 x 2½	21	8 lbs.	Freon	Water	Open	Reciprocating	Belt	3.25 pts.	30¾ x 17¾ x 22⅜
WKL-5100	...	...	...	...	...	...	490	7,475	1	2	2¼ x 2½	24	8 lbs.	Freon	Water	Open	Reciprocating	Belt	3.75 pts.	35½ x 18 x 22½
WRL-5150	...	...	...	...	...	...	550	11,150	1½	2	2¼ x 3½	34	12 lbs.	Freon	Water	Open	Reciprocating	Belt	4 pts.	40⅝ x 20½ x 27½
WYL-5200	...	...	...	...	...	...	440	13,450	2	2	2¾ x 3½	34	12 lbs.	Freon	Water	Open	Reciprocating	Belt	5 pts.	40⅝ x 20½ x 27⅝
WTL-5300	...	...	...	...	...	...	440	20,100	3	2	3¼ x 4	44	15 lbs.	Freon	Water	Open	Reciprocating	Belt	7 pts.	45⅝ x 22⅝ x 32¼
WTL-5500	...	...	...	...	...	...	550	23,550	5	2	3¼ x 4	47	.. lbs.	Freon	Water	Open	Reciprocating	Belt	7 pts.	56½ x 22⅝ x 32⅜
WG-533	...	...	455	3,900*	...	...	...	...	⅓	2	1½ x 1¾	12	5 lbs.	Freon	Water	Open	Reciprocating	Belt	2 pts.	25⅝ x 14⅛ x 19⅛
WH-550	...	...	490	5,850*	...	...	...	...	½	2	1 11/16 x 2	13	6 lbs.	Freon	Water	Open	Reciprocating	Belt	2 pts.	29 x 15⅜ x 19¼
WF-575	...	...	490	8,300*	...	...	...	...	¾	2	1 13/16 x 2½	21	8 lbs.	Freon	Water	Open	Reciprocating	Belt	3.25 pts.	30¾ x 17¾ x 22⅜
WK-5100	...	...	440	11,650*	...	...	...	...	1	2	2¼ x 2½	24	8 lbs.	Freon	Water	Open	Reciprocating	Belt	3.75 pts.	35½ x 18 x 22½
WR-5150	...	...	480	17,050*	...	...	...	...	1½	2	2¼ x 3½	34	12 lbs.	Freon	Water	Open	Reciprocating	Belt	4 pts.	40⅝ x 20½ x 27½
WY-5200	...	...	400	22,750*	...	...	...	...	2	2	2¾ x 3½	34	12 lbs.	Freon	Water	Open	Reciprocating	Belt	5 pts.	40⅝ x 20½ x 27⅝
WT-5300	...	...	375	31,850*	...	...	...	...	3	2	3¼ x 4	44	15 lbs.	Freon	Water	Open	Reciprocating	Belt	7 pts.	45⅝ x 22⅝ x 32¼
WT-5500	...	...	480	42,000*	...	...	...	...	5	2	3¼ x 4	47	.. lbs.	Freon	Water	Open	Reciprocating	Belt	7 pts.	56½ x 22⅝ x 32⅜
WU-5750	...	...	650	74,550†	...	...	...	...	7½	2	3⅝ x 4½	96	.. lbs.	Freon	Water	Open	Reciprocating	Belt	24 pts.	67 x 30¾ x 39⅝
WV-51000	...	...	440	106,900†	...	...	...	...	10	2	3⅝ x 4½	170	.. lbs.	Freon	Water	Open	Reciprocating	Belt	24 pts.	92⅛ x 28⅝ x 43⅜
WV-51500	...	...	650	148,900†	...	...	...	...	15	2	3⅝ x 4½	170	.. lbs.	Freon	Water	Open	Reciprocating	Belt	24 pts.	92⅛ x 28⅝ x 43⅜
WG-633	365	4,900	...	...	...	...	...	...	⅓	2	1½ x 1¾	12	5 lbs.	Freon	Water	Open	Reciprocating	Belt	2 pts.	25⅝ x 14⅛ x 19⅛
WH-650	410	7,275	...	...	...	...	...	...	½	2	1 11/16 x 2	13	6 lbs.	Freon	Water	Open	Reciprocating	Belt	2 pts.	29 x 15⅜ x 19¼
WF-675	400	10,350	...	...	...	...	...	...	¾	2	1 13/16 x 2½	21	8 lbs.	Freon	Water	Open	Reciprocating	Belt	3.25 pts.	30¾ x 17¾ x 22⅜
WK-6100	400	16,825	...	...	...	...	...	...	1	2	2¼ x 2½	24	8 lbs.	Freon	Water	Open	Reciprocating	Belt	3.75 pts.	35½ x 18 x 22½
WR-6150	400	23,100	...	...	...	...	...	...	1½	2	2¼ x 3½	34	12 lbs.	Freon	Water	Open	Reciprocating	Belt	4 pts.	40⅝ x 20½ x 27½
WY-6200	375	31,050	...	...	...	...	...	...	2	2	2¾ x 3½	34	12 lbs.	Freon	Water	Open	Reciprocating	Belt	5 pts.	40⅝ x 20½ x 27⅝
WT-6300	300	40,000	...	...	...	...	...	...	3	2	3¼ x 4	44	15 lbs.	Freon	Water	Open	Reciprocating	Belt	7 pts.	45⅝ x 22⅝ x 32¼
WT-6500	440	58,750	...	...	...	...	...	...	5	2	3¼ x 4	47	.. lbs.	Freon	Water	Open	Reciprocating	Belt	7 pts.	56½ x 22⅝ x 32⅜
WU-6750	485	94,500	...	...	...	...	...	...	7½	2	3⅝ x 4½	96	.. lbs.	Freon	Water	Open	Reciprocating	Belt	24 pts.	67 x 30¾ x 39⅝
WU-61000	650	121,100	...	...	...	...	...	...	10	2	3⅝ x 4½	170	.. lbs.	Freon	Water	Open	Reciprocating	Belt	24 pts.	92⅛ x 28⅝ x 43⅜
WV-61500	485	188,000	...	...	...	...	...	...	15	4	3⅝ x 4½	170	.. lbs.	Freon	Water	Open	Reciprocating	Belt	24 pts.	92⅛ x 28⅝ x 43⅜
WV-62000	650	242,200	...	...	...	...	...	...	20	4	3⅝ x 4½	300	.. lbs.	Freon	Water	Open	Reciprocating	Belt	24 pts.	93¼ x 31 x 46

*Units rated with suction temperature of 18° F. †Units rated with suction temperature of 16° F.

Westinghouse

Westinghouse Electric & Mfg. Co.
Mansfield, Ohio.

Compressor—External balanced, bellows, lubricated ring type seal on open-type units. Cylinder head cooled by air. Splash-type lubricating system. Oil level measured by sight gauge. Special compressor oil.

Controls—Penn combination high and low pressure type. All models have high pressure cutout. Type of overload cutout: Thermal automatic reset on sealed units; manual reset on open units. Condensing water flow controlled by pressure valve. Penn water regulating valve.

Valves—Type of intake valves: disc on open type, flapper on sealed units. Type of discharge valves: poppet on open type, flapper on sealed units.

Condenser — Air-cooled models: finned radiator. Water-cooled: shell and tube.

Materials Used: Cylinder block: cast semi-steel on open; cast steel on hermetic. Pistons: cast iron on open and tool steel on hermetic. Condenser tubing: copper. Condenser shell: steel.

Liquid Receiver—Horizontal type. All models have fusible safety plug and refrigerant filter.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
ASA-12	1,725	1,138	1,725	629	1,725	425	1,725	273	⅛	1	1 x ⅞	4	2½ lbs.	SO_2	Air	Hermetic	Reciprocating	Direct	2 pts.	18½ x 18½ x 11½
AFA-16	1,725	1,490	1,725	1,060	1,725	755	1,725	510	⅙	1	1 x ⅞	4	2½ lbs.	F-12	Air	Hermetic	Reciprocating	Direct	2 pts.	18½ x 18½ x 11½
ASB-25	1,725	2,100	1,725	1,310	1,725	875	1,725	560	¼	2	1 x ⅞	6	4 lbs.	SO_2	Air	Hermetic	Reciprocating	Direct	2½ pts.	24 x 18½ x 11⅞
AFB-33	1,725	3,095	1,725	2,290	1,725	1,710	1,725	1,200	⅓	2	1 x ⅞	6	4 lbs.	F-12	Air	Hermetic	Reciprocating	Direct	2½ pts.	24 x 18½ x 11⅞
WFB-33	1,725	4,180	1,725	2,780	1,725	1,960	1,725	1,325	⅓	2	1 x ⅞	6	4 lbs.	F-12	Water	Hermetic	Reciprocating	Direct	2½ pts.	24 x 18½ x 11⅜
ASC-50	1,725	4,350	1,725	2,690	1,725	1,725	1,725	990	½	4	1 x ⅞	15	8 lbs.	SO_2	Air	Hermetic	Reciprocating	Direct	6 pts.	30 x 18½ x 24¾
WSC-50	1,725	5,400	1,725	3,000	1,725	1,900	1,725	1,100	½	4	1 x ⅞	15	8 lbs.	SO_2	Water	Hermetic	Reciprocating	Direct	6 pts.	30 x 18½ x 24¾
WFC-75	1,725	7,965	1,725	5,020	1,725	3,650	1,725	2,460	¾	4	1 x ⅞	15	8 lbs.	F-12	Water	Hermetic	Reciprocating	Direct	6 pts.	30 x 18½ x 20
AFH-50	280	5,280	320	4,080	360	3,120	360	2,034	½	2	2⅛ x 1½	8.1	4 lbs.	F-12	Air	Open	Reciprocating	Belt	3 pts.	30 x 23⅜ x 19⅛
WFH-50	280	5,820	320	4,275	370	3,315	370	2,160	½	2	2⅛ x 1½	8.1	4 lbs.	F-12	Water	Open	Reciprocating	Belt	3 pts.	30 x 23⅜ x 19⅛
AFR-100	260	10,095	325	8,460	390	7,290	390	5,175	1	2	2¼ x 3	45	8 lbs.	F-12	Air	Open	Reciprocating	Belt	6 pts.	32⅜ x 31½ x 28
WFR-100	300	12,450	360	9,945	360	8,640	360	5,730	1	2	2¼ x 3	39	8 lbs.	F-12	Water	Open	Reciprocating	Belt	6 pts.	32⅝ x 24¼ x 28
AFR-150	360	13,875	460	12,060	460	8,835	460	6,240	1½	2	2¼ x 3	45	8 lbs.	F-12	Air	Open	Reciprocating	Belt	6 pts.	32⅜ x 31½ x 30¾
WFR-150	400	17,475	500	14,475	500	10,260	500	6,885	1½	2	2¼ x 3	36½	8 lbs.	F-12	Water	Open	Reciprocating	Belt	6 pts.	32⅝ x 24¼ x 28
AFS-200	370	17,835	460	15,165	460	11,250	460	8,190	2	2	2½ x 3	45	8 lbs.	F-12	Air	Open	Reciprocating	Belt	6 pts.	32⅜ x 31½ x 30⅝
WFS-200	415	21,450	500	17,220	500	12,165	500	8,235	2	2	2½ x 3	35	8 lbs.	F-12	Water	Open	Reciprocating	Belt	6 pts.	32⅝ x 24¼ x 28⅜
WFT-300	435	32,700	500	24,600	500	17,700	500	12,045	3	3	2½ x 3	30	10 lbs.	F-12	Water	Open	Reciprocating	Belt	8 pts.	36¾ x 25⅛ x 31⅜
WFU-500	400	54,000	455	42,000	500	34,000	500	25,000	5	3	3 x 3¼	40	5 lbs.	F-12	Water	Open	Reciprocating	Belt	7½ pts.	52½ x 24¾ x 33
WFX-750	300	86,000	380	79,000	440	69,500	440	49,200	7½	3	3 x 4	68	8 lbs.	F-12	Water	Open	Reciprocating	Belt	12 pts.	58¾ x 32⅝ x 39½
WFX-1000	362	113,000	440	94,300	513	80,000	513	57,500	10	3	3 x 4	68	8 lbs.	F-12	Water	Open	Reciprocating	Belt	12 pts.	58¾ x 32⅝ x 39½
WFX-1500	550	154,000	570	110,500	570	83,500	570	56,000	15	3	3 x 4	68	8 lbs.	F-12	Water	Open	Reciprocating	Belt	12 pts.	58¾ x 32⅝ x 41¼

Brunner

Brunner Mfg. Co., Utica, N. Y.

Compressor—Balanced bellows shaft seal. Cylinder head cooled by air. Splash lubricating system. Oil level measured by visible gauge glass. Mineral compressor oil. Viscosity of compressor oil: 200 to 300 at 100° F.

Condenser — Air-cooled: fin tube. Water-cooled: double tube. In air-cooled models, located in back of unit; in water-cooled models, between compressor and motor.

Controls—Detroit Lubricator pressure controls. All water-cooled models have high pressure cutout. Magnetic starter type overload cutout. Condensing water flow controlled by pressure-type water valve. Electrimatic water regulating valve.

Liquid Receiver—Horizontal type. All models have fusible safety plug.

Materials Used—Cylinder block and pistons: nickel iron. Condenser tubing: copper. Condenser shell: steel.

Valves—Flex leaf intake and discharge valves of Swedish steel.

Special Features—Dual valve plates.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
A-25	...	...	275	1,670	275	1,175	...	...	¼	2	1 13/16 x 1⅜	6.5	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1⅓ pts.	22 x 16¼ x 16¾
A-33	...	...	350	2,080	350	1,490	...	...	⅓	2	1 13/16 x 1⅜	6.5	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1⅓ pts.	22 x 16¼ x 16¾
A-50	...	...	520	3,210	520	2,100	...	...	½	2	1 13/16 x 1⅜	14.6	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1⅓ pts.	29¼ x 20 x 18½
W-50	470	5,420	590	4,260	590	2,880	...	...	½	2	1 13/16 x 1⅜	6.5	4 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	1⅓ pts.	29¼ x 16¾ x 18½
A-75	...	...	340	4,930	340	3,530	...	...	¾	2	2½ x 1¾	14.6	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3¾ pts.	30 x 22⅜ x 21½
W-75	275	8,300	375	6,370	375	4,180	...	...	¾	2	2½ x 1¾	14.6	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3¾ pts.	29¼ x 19¼ x 21¾
A-100	...	...	450	6,970	450	4,890	...	...	1	2	2½ x 1¾	18.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3¾ pts.	36 x 23½ x 22⅜
W-100	400	11,200	475	8,900	475	6,450	...	...	1	2	2½ x 1¾	14.6	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3¾ pts.	36 x 21 x 22¾
A-150	...	...	310	10,600	310	7,320	...	...	1½	2	3¼ x 2¼	18.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	36 x 24⅜ x 23¾
W-150	260	16,600	350	14,550	350	10,680	...	...	1½	2	3¼ x 2¼	18.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	36 x 21 x 24⅝
A-200	...	...	400	13,950	400	10,100	...	...	2	2	3¼ x 2¼	18.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	36¾ x 26½ x 23¾
W-200	350	22,100	475	20,100	475	13,750	...	...	2	2	3¼ x 2¼	18.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	36 x 23 x 24⅝
W-300	275	35,600	325	28,200	325	19,600	...	...	3	4	3¼ x 2¼	43	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	54¼ x 24 x 31½
W-500	460	57,700	525	43,500	525	30,600	...	...	5	4	3¼ x 2¼	43	16 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	54¼ x 24 x 31½
W-750	300	88,900	350	67,200	350	47,000	...	...	7½	4	4¼ x 3	55.3	20 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	19 pts.	72¼ x 34 x 41¼
W-1000	400	114,500	450	83,800	450	59,600	...	...	10	4	4¼ x 3	55.3	20 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	19 pts.	72¼ x 34 x 41¼
W-1500	550	156,000	...	...	...	...	...	...	15	4	4¼ x 3	55.3	20 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	19 pts.	72¼ x 34 x 41¼

Commercial Uses

Cleveland Distributors Revise Organizations as Commercial Sales Take New Trends

By T. T. Quinn

(Editor's Note): A few weeks ago two members of the editorial staff journeyed to Chicago, interviewed commercial refrigeration distributors on 1936 sales trends and selling methods, and reported their observations in the April 15 issue.

Last week Assistant Editor T. T. Quinn visited the Ohio cities of Cleveland, Youngstown, Akron, and Canton on a similar mission. His report on Cleveland will be found on this and succeeding pages, and the report on Youngstown on pages 25 and 26. Articles on commercial refrigeration activities in the other Ohio cities will follow in next week's issue.

Frigidaire Finds Improvement Greatest in Provincial Areas

Business in the provincial (or country) territory is considerably better than in the metropolitan Cleveland area, according to H. H. Kennedy, manager of Frigidaire Sales Co., Cleveland distributing Office.

"While straight commercial sales, as a whole, have shown an overall increase of 25%," Mr. Kennedy said, "sales of similar equipment in the provincial territory have increased almost 60%."

The company has about 60 commercial dealers in the northern Ohio territory which it covers; several of its best towns, commercially speaking, are handled by branch offices of Ohio Edison Co., an aggressive merchandiser of both domestic and commercial equipment.

Redmond Is Cleveland Dealer

Cleveland dealer is H. A. Redmond Co., which also handles the Gloekler line of refrigerated display cases and coolers. This company has the franchise for all Frigidaire equipment with the exception of water coolers. That line, in Cleveland, is handled by Distillata Corp., a large distributor of carbonated beverages and distilled water.

The beverage cooling angle of the commercial business has been especially encouraging in recent weeks, Mr. Kennedy says, especially since Frigidaire has come out with its new one-gallon water cooler. The company immediately sold 200 of them to Distillata, which plans to distribute them among the business concerns in the city who are customers for its distilled water.

The small-size water cooler, according to Mr. Kennedy, is opening up a new field—made up of those concerns whose requirements weren't large enough to justify installation of the four or six-gallon size coolers. The start, encouraging as it is, is just the ground-breaker, Mr. Kennedy thinks; he is confident this new cooler will bring in business from companies which the rest of the water cooler line couldn't have touched.

Water Cooler Sales Up 20%

Water cooler sales, incidentally, are up 20% over their 1935 mark, Mr. Kennedy reports, with the business spread pretty evenly over both metropolitan and provincial territory. Ice cream cabinet sales, also, have shown a nice gain over last year; about 33⅓%, Mr. Kennedy's figures indicate. This business has also been fairly evenly spread between city and country.

The provincial territory, as a matter of fact, is pretty nearly stealing the whole refrigeration show. In the household field, country business is up 67%, while the overall domestic figure for the whole territory is about 30.1% increased over last year.

Most of the company's sales in the straight commercial field, Mr. Kennedy said, have been in the less-than-3 hp. class. All branches of business, including butcher shops, grocers, restaurants, and delicatessens, have been represented in the sales columns.

Industrial water cooling sales have also been encouraging, both in Cleveland and in the outlying territories. Most of these have been of the circulating system type, with bubblers on all floors connected to remote compressors; others have been of the unit cooler variety.

An installation in this latter classification was made recently in the Cleveland plant of Corrigan-McKinney Steel Co., a subsidiary of Republic Steel Corp., and called for 86 unit coolers. Total cost of the job approximated $22,000.

Distillata Buys Large Units

Another interesting installation made by the company was in the Distillata Corp. plant in Cleveland to cool the liquid used in making carbonated beverages. Equipment used included two 15-hp. compressors and two Acme shell-and-tube condensers.

The equipment, under summer conditions, is designed to handle 325 gallons per hour of water on each machine, cooling it from 95° F. to 40° F. During the winter months, when bottling requirements are considerably lower, one machine handled 500 gallons per hour, bringing it down to about 38° F. from an ariginal temperature somewhere around 70° F.

This performance has satisfied officials that the machines will be well able to do their required work when hot weather comes and the real demand is made on the equipment.

Commercial manager of Frigidaire Sales Co. is John Tracy. Four commercial salesmen work the territory, contacting dealers and helping them close sales, and doing some of the estimating when the job is of standard specifications. For special work, and where more than average engineering is required, either Mr. Tracy or a sales engineer, who is with the company, handles this end of the job.

Engineer Helps Sales

"We've been fortunate in having this young sales engineer with us," Mr. Tracy said. "He has helped us with a good many sales. A lot of times, you'll find that a man who understands engineering doesn't get along very well as a salesman—but this man seems to combine the salesman's angle with that of the engineer."

"When the job is one of the ordinary run-of-mine commercial installations, the dealer can usually get about all the information he needs from Frigidaire's standard book on applications. If it's tougher, one of our field men may take a hand and help him out. On unusual jobs, either our engineer or myself takes it over."

The company operates on an almost 100% wholesale basis, leaving the general sales work to the individual dealers. Special installations, such as the one made at the Distillata plant, and some of the larger industrial jobs, however, are handled by the company direct.

Engineering Accuracy Checked

All jobs, from the smallest to the most difficult, are checked by the distributor's engineering department for engineering accuracy before final approval is given them.

The company doesn't demand engineering backgrounds for the men who do its field work—as a matter of fact (with the exception of the sales engineer already mentioned), it has found its best results with salesmen of the non-engineering type, Mr. Tracy says.

"One advantage with having salesmen who aren't technically trained is that they aren't so apt to get themselves lost in technical details," he added.

"The main purpose of salesmen is to sell—that's why they are employed. Every one of our field men has had from eight to 10 years of experience in the commercial field, and they know the ins and outs of the business from one end to the other.

Edison Dealer in Many Towns

"They talk a good line of commercial—and they talk it mighty effectively, believe me—even if they don't have a deep technical background.

"We've found it doesn't pay to have our commercial field men become too intimate with the technical side of the business; they're too apt to get themselves tied up with details."

Tie in With Case Dealer

Most of the company's dealers in the cities outside Cleveland, Mr. Tracy said, are the offices of Ohio Edison Co. This is true of the larger communities more than it is of the small ones. In many places of this latter class, individual dealers handle the commercial work, mostly in the "bird dog" capacity of prospect-hunters.

"The utility company has done an outstanding job for us in the larger towns," Mr. Tracy said. "This is due to several reasons. In the first place, utilities are interested in boosting their power loads, and commercial equipment offers them an excellent chance to do this.

"Then, too, utilities, where the town is of any size, have one or more men who work exclusively on commercial sales. This concentrated selling affort is bound to bring results far over that of dealers who have their salesmen working on both commercial and household sales."

Case Dealer Supplies Tips

What about commercial cases? Does the company handle any, or has it a working agreement with any one?

"We don't, of course, handle any line of cases ourselves. Frigidaire isn't in that business, so naturally we wouldn't be in from that side. As a matter of fact, at one time we did consider rather seriously the possibilities of taking on a line of commercial cases, but we gave it up in favor of what we've found is a better plan.

"Our dealer here in Cleveland, Redmond Co., handles the Gloekler line of cases—and I understand is doing a good job with it.

"But where dealers don't have a definite tie-up, we encourage them to get on good terms with the case company who seems to be doing the best business in that territory, and work in cooperation with them. We find this works out very well from two angles—ours and the case dealer's.

"Being on friendly terms with us, the dealer finds that he can trade prospects back and forth—refrigerating equipment for cases, you might say—and both businesses profit.

'String Along With Leader'

"For instance, when the case man comes across a prospect for some of his equipment, he slips the information to our dealer, indicating that he might also be in the market for a compressor or some other refrigerating equipment. And when one of our dealer's men finds a prospect for his equipment, he'll return the favor.

"Of course, this sort of 'reciprocity' needn't be limited to one case company. The more a dealer can work with, in harmony, the better his business will be and the more prospects he'll get from them.

"But in most cases, one company gets a great deal of the case business in one territory—merchants have a habit of buying the type of equipment they've had some first-hand or intimate acquaintance with.

"In one territory it might be Gloekler, in another Hussman, in a third Seeger—or any one of a half dozen others. Whatever the leader, we've found it a good policy to sort of string along with them, trading prospect for prospect. In the territory where we have utility representatives, this works out especially well.

"Most of the case manufacturers have representatives working a rather wide territory—several counties; for case sales aren't so frequent in these times, unless there's a city of important size in a county. These case salesmen like the prestige of working with a local salesman—it gives them an opening, a better chance to create a favorable first impression on the merchant they're trying to sell."

What about beer equipment?

Business is fair, Mr. Tracy said. Most of it is in the precooling and dispensing of keg beer. Very little if any beer distributing is done on a retail basis.

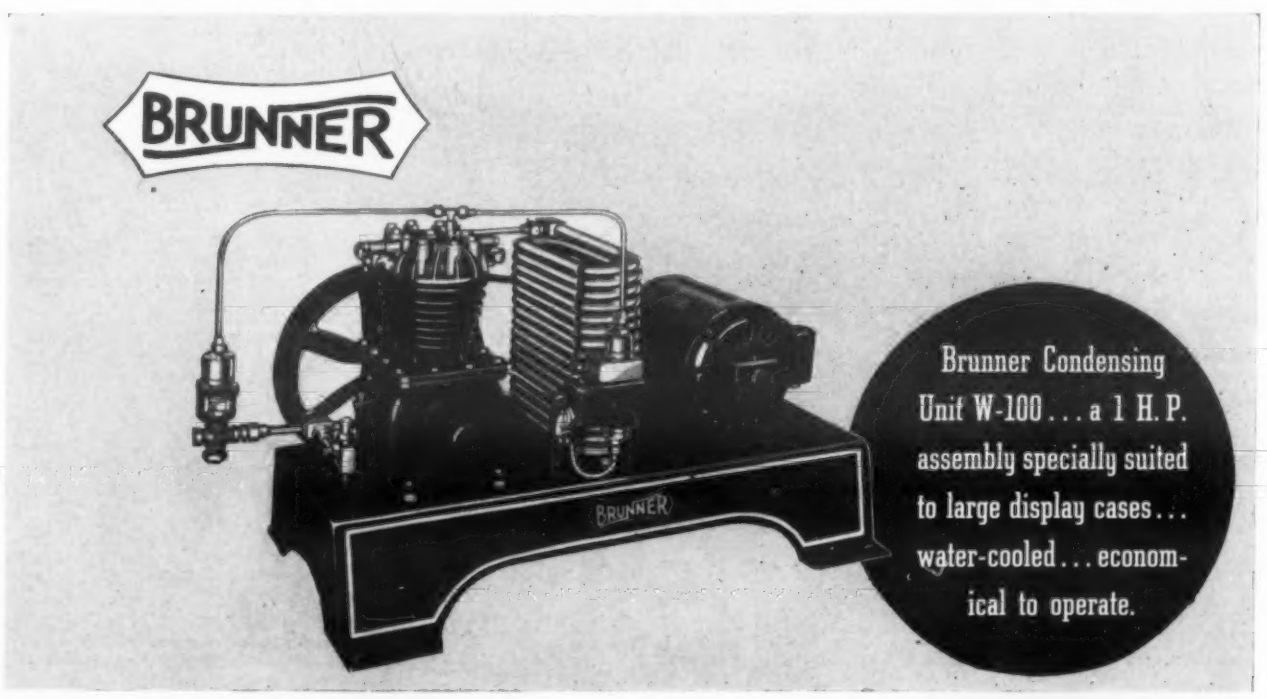
"Of course, Cleveland isn't what you'd call a beer-drinking town. They don't like it nearly as much as they do in some other cities, like Chicago or St. Louis.

"Most of our work in this field has

(Continued on Page 11, Column 1)

"I WASN'T LOOKING FOR *Pinch-Penny* ECONOMY"

★ A good many owners of Brunner Refrigeration Units express downright enthusiasm at the economy—the noticeable economy—of this equipment over previous installations. Buying Brunner primarily for dependability, they receive as a premium, refrigeration at lower cost. ★ ★ ★ Brunner economy is like that:—the by-product of a construction which combines strength and endurance, with a new kind of smooth efficiency. The practical results are reduced power bills... a minimum of adjustments and repairs and delays... prolonged usefulness... and all the while 100% effective refrigeration. ★ ★ ★ Go carefully through the points of interest of the Brunner line—the vibrationless operation... the compact assembly... the "flex leaf" valves... dependable controls. Every detail typifies Brunner Quality... Forty-one condensing units, eight compressor models; air and water cooled; electric motor or gas engine driven; in a range from 1/6 H.P. to 15 H.P. Full particulars on request. Brunner Manufacturing Co., Utica, N.Y., U.S.A.


BRUNNER
BRUNNER
Brunner Condensing Unit W-100... a 1 H.P. assembly specially suited to large display cases... water-cooled... economical to operate.

BRUNNER CONDENSING UNITS and COMPRESSORS

Servel

Servel, Inc., Evansville, Ind.

Compressor—Balanced bellows shaft seal. Cylinder head cooled by water in water-cooled models except WAC and WC models; by air in air-cooled models. G and V models have force-feed type lubricating system, others have splash type. Oil level measured by oil filler plugs, except V models, bull's eye gauge. Type of compressor oil: Servel white oil. Viscosity 300 seconds Saybolt at 100° F.

Condenser—Air-cooled models: fin tube. Water-cooled models: counter-flow concentric tube; counterflow shell and tube in V models. Condenser located on machine base.

Liquid Receiver—Horizontal type on all models except H-33. G and V models have fusible safety plug.

Materials Used—Cylinder block: semi-steel. Pistons: semi-steel. Condenser tubing: copper. Condenser shell: cast iron and drawn steel.

Controls—Penn and Cutler-Hammer pressure type control except LH and A-25, temperature. All water-cooled models have high pressure cutout. Condensing water flow controlled by pressure actuated water valve. Servel water regulating valve.

Valves—Servel disc intake and discharge valves.

Special Features—Copper-lead bearings, truncated pistons, oil check valve, sealed crankcase construction, liquid level test cock, stream-air fans, locked wrist pins, self-lubricating pistons, diamond-bored connecting rods.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
LH-25	550	...	550	...	550	1,278	550	892	¼	2	1⅜ x 1⅛	3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	19¾ x 16⅛ x 12
H-25	450	...	450	1,594	450	1,044	450	720	¼	2	1⅜ x 1⅛	3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	19¾ x 16⅛ x 12
H-33	610	...	610	2,189	610	1,440	610	1,000	⅓	2	1⅜ x 1⅛	3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	19½ x 16¾ x 13
C-33	350	...	350	2,580	350	1,620	350	783	⅓	2	1⅝ x 1⅝	6	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	16¾ x 18⅝ x 27
C-50	630	...	630	4,050	630	2,700	630	1,737	½	2	1⅝ x 1⅝	6	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	20¾ x 18⅝ x 27
WC-50	660	...	660	4,780	660	3,000	660	1,818	½	2	1⅝ x 1⅝	*9 6	3 lbs. 3 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	20¾ x 18⅝ x 27
D-75	465	...	465	7,150	465	5,080	465	3,420	¾	2	2⅛ x 2	*10 10	6 lbs. 6 lbs.	Freon CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	22 x 22 x 30
WD-75	465	...	465	7,740	465	5,270	465	3,420	¾	2	2⅛ x 2	*15 10	6 lbs. 6 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	22 x 22 x 30
D-100	590	...	590	9,520	590	6,250	590	4,080	1	2	2⅛ x 2	*15 10	6 lbs. 6 lbs.	Freon CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	22¾ x 22 x 30
WD-100	590	...	590	9,820	590	6,470	590	4,075	1	2	2⅛ x 2	*15 10	6 lbs. 6 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	23¾ x 22½ x 30
E-150	530	...	530	12,920	530	9,120	530	6,600	1½	2	2¼ x 2 13/16	*27 18	6 lbs. 6 lbs.	Freon CH_3Cl	Air	Open	Reciprocating	Belt	8 pts.	26¾ x 26½ x 36½
WE-150	530	...	530	14,120	530	9,720	530	6,620	1½	2	2¼ x 2 13/16	*27 18	6 lbs. 6 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	27¾ x 25¼ x 36½
E-200	700	...	700	17,120	700	12,000	700	8,400	2	2	2¼ x 2 13/16	*27 18	6 lbs. 6 lbs.	Freon CH_3Cl	Air	Open	Reciprocating	Belt	8 pts.	27¾ x 25¼ x 36½
WE-200	700	...	700	18,900	700	12,920	700	8,420	2	2	2¼ x 2 13/16	*27 18	6 lbs. 6 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	27 x 26½ x 36½
WO-300	425	...	425	27,250	425	19,400	425	13,350	3	3	2⅞ x 2 13/16	*27 18	6 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	5 qts.	39 x 30 x 26½
WO-500	690	...	690	46,400	690	33,300	690	21,250	5	3	2⅞ x 2 13/16	*27 18	6 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	5 qts.	39 x 30 x 26½
WG-500	500	...	500	48,600	500	34,800	500	22,250	5	2	3¾ x 3¾	*97 65	none ...	Freon CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	48 x 27 x 56
WG-750	700	...	700	67,500	700	48,500	700	30,950	7½	2	3¾ x 3¾	*97 65	none ...	Freon CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	48 x 27 x 56
WV-1000	500	...	500	97,200	500	69,300	500	44,200	10	4	3¾ x 3¾	*120 80	none	Freon CH_3Cl	Water	Open	Reciprocating	Belt	3 gal.	60 x 31½ x 35⅝
WV-1500	700	...	700	135,000	700	96,800	700	62,000	15	4	3¾ x 3¾	*120 80	none	Freon CH_3Cl	Water	Open	Reciprocating	Belt	3 gal.	60 x 31½ x 35⅝
WAC-50	500	6,220	500	...	500	...	500	...	½	2	1⅝ x 1⅝	*9 6	3 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	1 qt.	27 x 20¾ x 18⅝
WAC-75	700	8,900	...	...	...	...	...	...	¾	2	1⅝ x 1⅝	*9 6	3 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	20¾ x 18⅝ x 27
WAD-100	465	13,190	...	...	...	...	...	...	1	2	2⅛ x 2	*23 10	6 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	22½ x 25¾ x 30
WAD-150	590	17,280	...	...	...	...	...	...	1½	2	2⅛ x 2	*23 10	6 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	23¾ x 22½ x 30
WAE-200	530	23,830	...	...	...	...	...	...	2	2	2¼ x 2 13/16	*27 18	6 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	27¾ x 25¼ x 36½
WAE-300	700	31,820	...	...	...	...	...	...	3	2	2¼ x 2 13/16	*27 18	6 lbs.	Freon CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	27 x 26½ x 36½
WAO-500	535	57,450	535	...	535	...	535	...	5	3	2⅞ x 2 13/16	*27 18	none	Freon CH_3Cl	Water	Open	Reciprocating	Belt	5 qts.	39 x 30 x 26½
WAO-750	690	72,570	690	...	690	...	690	...	7½	3	2⅞ x 2 13/16	*27 18	none	Freon CH_3Cl	Water	Open	Reciprocating	Belt	5 qts.	39 x 30 x 26½
WAG-750	500	84,380	...	...	...	...	...	...	7½	2	3¾ x 3¾	*97 65	none	Freon CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	48 x 27 x 56
WAG-1000	700	120,000	...	...	...	...	...	...	10	2	3¾ x 3¾	*97 65	none	Freon CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	48 x 27 x 56
WAV-1500	500	168,760	500	...	500	...	500	...	15	4	3¾ x 3¾	*120 80	none	Freon CH_3Cl	Water	Open	Reciprocating	Belt	3 gal.	60 x 31½ x 35½
WAV-2000	700	240,000	700	...	700	...	700	...	20	4	3¾ x 3¾	*120 80	none	Freon CH_3Cl	Water	Open	Reciprocating	Belt	3 gal.	60 x 31½ x 35½

*Top figure is for Freon-charged units, lower figure for methyl chloride.

Carrier

Carrier Engineering Corp.
Newark, N. J.

Compressor—Bellows shaft seal. Cylinder head cooled by air. Splash lubrication. Oil level measured by test cocks on model 7F2 and smaller, bull's eye on 7F3 and larger. Dehydrated and de-aerated oil, viscosity S.A.E. 20W.

Condenser—Shell and tube on water-cooled models, finned coil on air-cooled. Located at center of base under compressor.

Liquid Receiver—Horizontal type. Air-cooled models of ¾-hp. or over and all water-cooled models have fusible safety plug. All models have refrigerant filter.

Materials Used—Cylinder block, semi-steel, nickel alloy. Pistons, gray cast iron. Condenser tubing, copper. Condenser shell, steel.

Control—Detroit Lubricator dual pressurestat. High-low cut-out. All water-cooled models have high-pressure cut-out. Thermal overload cut-out. Condensing water flow controlled by pressure-regulated water valve. Tag water-regulating valves on models to 10-hp., Spence on larger models.

Valves—Ring plate intake and discharge valves.

Special Features—Liquid level indicator on all receivers. Circulating fan and "air transformer" enclosing condenser on air-cooled models.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
7F0-14AF	340	2,600	380	1,940	430	1,510	430	1,020	¼	1	1⅞ x 2	...	3 lbs.	*Freon	Air	Open	Reciprocating	Belt	2 pts.	23½ x 15 7/16 x 16
7F0-13AF	430	3,300	430	2,210	430	1,510	430	1,020	⅓	1	1⅞ x 2	...	3 lbs.	*Freon	Air	Open	Reciprocating	Belt	2 pts.	23½ x 15 7/16 x 16
7F1-13AF	225	3,460	255	2,610	280	1,980	280	1,340	⅓	2	1⅞ x 2	...	3½ lbs.	*Freon	Air	Open	Reciprocating	Belt	3 pts.	34 x 22¾ x 22
7F1-12AF	280	4,400	310	3,220	380	2,700	380	1,830	½	2	1⅞ x 2	...	4 lbs.	*Freon	Air	Open	Reciprocating	Belt	3 pts	34 x 22¾ x 23
7F2-34AF	230	5,900	255	4,670	285	3,640	320	2,750	¾	2	2½ x 2	...	4½ lbs.	*Freon	Air	Open	Reciprocating	Belt	3 pts.	34 x 22¾ x 25
7F2-10AF	285	7,900	320	5,840	400	5,070	400	3,420	1	2	2½ x 2	...	8 lbs.	*Freon	Air	Open	Reciprocating	Belt	3 pts.	34 x 22¾ x 25
7F2-15AF	430	11,720	470	8,510	470	6,020	470	4,070	1½	2	2½ x 2	...	12 lbs.	*Freon	Air	Open	Reciprocating	Belt	3 pts.	34 x 22¾ x 29½
7F1-13WF	255	4,150	255	2,940	280	2,270	280	1,630	⅓	2	1⅞ x 2	29	4 lbs.	*Freon	Water	Open	Reciprocating	Belt	3 pts.	36 x 17⅝ x 22
7F1-12WF	350	5,700	350	4,030	380	3,080	380	2,210	½	2	1⅞ x 2	28	4 lbs.	*Freon	Water	Open	Reciprocating	Belt	3 pts.	36 x 17⅝ x 22
7F2-34WF	285	8,800	285	6,440	320	4,920	320	3,350	¾	2	2½ x 2	27	5 lbs.	*Freon	Water	Open	Reciprocating	Belt	3 pts.	36 x 17⅝ x 22
7F2-10WF	355	11,000	355	8,020	400	6,160	400	4,180	1	2	2½ x 2	26	8 lbs.	*Freon	Water	Open	Reciprocating	Belt	3 pts.	36 x 17⅝ x 22
7F3-15WF	285	17,700	285	12,200	315	9,150	315	6,400	1½	2	3 x 2⅝	62	12 lbs.	*Freon	Water	Open	Reciprocating	Belt	5 pts.	43¼ x 22¼ x 31½
7F3-20WF	390	24,200	390	16,700	430	12,500	430	8,740	2	2	3 x 2⅝	61	12 lbs.	*Freon	Water	Open	Reciprocating	Belt	5 pts.	43¼ x 22¼ x 31½
7F4-30WF	390	36,300	390	25,000	430	18,800	470	14,350	3	3	3 x 2⅝	77	15 lbs.	*Freon	Water	Open	Reciprocating	Belt	7 pts.	43⅜ x 29⅛ x 32
7F5-50WF	450	66,900	500	48,400	500	32,800	500	22,200	5	2	4¼ x 3	110	none	*Freon	Water	Open	Reciprocating	Belt	6 pts.	60½ x 30⅛ x 42
7F5-75WF	500	74,400	500	48,400	500	32,800	500	22,200	7½	2	4¼ x 3	110	none	*Freon	Water	Open	Reciprocating	Belt	6 pts.	60½ x 30⅛ x 42
7F6-100WF	450	134,000	500	96,800	500	65,600	500	44,400	10	4	4¼ x 3	220	none	*Freon	Water	Open	Reciprocating	Belt	13 pts	61¼ x 37⅜ x 41¾
7F6-150WF	500	149,000	500	96,800	500	65,600	500	44,400	15	4	4¼ x 3	220	none	*Freon	Water	Open	Reciprocating	Belt	13 pts	61¼ x 37⅜ x 41¾
7H5-50WF	450	66,900	500	48,400	550	63,100	600	26,600	5	2	4¼ x 3	155	none	*Freon	Water	Open	Reciprocating	Belt	13 pts.	59¾ x 30 x 44½
7H5-75WF	600	89,200	600	58,100	600	39,400	600	26,600	7½	2	4¼ x 3	155	none	*Freon	Water	Open	Reciprocating	Belt	13 pts.	59¾ x 30 x 44½
7H6-100WF	450	134,000	500	96,800	550	72,200	600	53,300	10	4	4¼ x 3	310	none	*Freon	Water	Open	Reciprocating	Belt	24 pts	63¾ x 37⅜ x 44½
7H6-150WF	600	179,000	600	116,000	600	78,800	600	53,300	15	4	4¼ x 3	310	none	*Freon	Water	Open	Reciprocating	Belt	24 pts	63¾ x 37⅜ x 44½

*All models available with methyl chloride as refrigerant.

Ice-O-Matic

Williams Oil-O-Matic Heating Corp.
Bloomington, Ill.

Compressor—Steel ring on bronze seat shaft seal. Cylinder head cooled by air (Models T-25, B-33, B-50, C-75, and F-150), water (FW-150, VW-200, and WW-300), or air and water (D-100). Forced feed lubrication on all models except B-33 and B-50, which are splash. Oil level measured by oil fill plug. Type of compressor oil: Socony S-1044, viscosity 225, (T-25); Socony 414, viscosity 145, (B-33, B-50); or Socony 431, viscosity 310 (all others).

Condenser—Finned tubing, located in front of motor.

Liquid Receiver—Horizontal type. All except T-25 have fusible safety plug, and all models have refrigerant filter.

Materials Used—Cylinder block: cast iron alloy. Pistons: cast iron alloy. Condenser tubing: copper. Condenser shell: steel.

Control—Penn pressure control (except T-25, Penn temperature). All models have high pressure cutout. Solder pot overload cutout. Condensing water flow controlled by head pressure Penn water-regulating valve.

Valves—Steel disc intake and discharge valves.

Special Features—Oil pump.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
T-25	445	2,290	416	1,530	379	1,086	379	743	¼	2	1 5/16 x 1 5/16	4.3	2½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	15½ x 23⅜ x 13 3/16
B-33	325	3,250	355	2,080	372	1,326	372	900	⅓	2	1⅝ x 1½	*	4 lbs.	CH_3Cl	Air or Water†	Open	Reciprocating	Belt	3 pts	20 x 28 x 24
B-50	440	4,700	475	3,050	530	2,076	530	1,418	½	2	1⅝ x 1½	.*	4 lbs.	CH_3Cl	Air or Water†	Open	Reciprocating	Belt	3 pts.	21½ x 29½ x 20¼
C-75	285	6,050	310	4,750	340	3,276	340	2,230	¾	2	2 x 2⅜	*	5 lbs.	CH_3Cl	Air or Water†	Open	Reciprocating	Belt	4 pts.	26 x 35 x 26½
D-100	340	9,700	285	6,220	375	4,416	375	3,100	1	2	‡	*	4 lbs.	CH_3Cl	Air or Water†	Open	Reciprocating	Belt	4 pts.	27½ x 35 x 28¼
F-150	375	13,580	400	9,420	425	6,240	425	4,260	1½	2	2⅜ x 2½	22.7	7 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	30 x 41 x 27
FW-150	400	15,600	425	10,820	450	7,176	450	4,900	1½	2	2⅜ x 2½	16.1	7 lbs.	CH_3Cl	Water†	Open	Reciprocating	Belt	4 pts.	30 x 41 x 27
VW-200	310	20,200	375	14,780	400	11,550	400	8,030	2	4	2⅜ x 2½	12.8	7 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	21¼ x 37 x 30
WW-300	400	32,000	425	20,300	500	14,232	500	9,700	3	4	2⅜ x 2½	12.8	7 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	21¼ x 37 x 30

*Pump down capacities: B-33—5.4 lbs. air, 2.9 lbs. water; model B-50—9.5 lbs. air, 6.5 lbs. water; model C-75—12 lbs. air, 7 lbs. water; model D-100—14.2 lbs. air, 12 lbs. water. †Or both air and water. ‡2⅜ x 2½ and 2 x 2⅜.

New Selling Methods Prove Their Merit As Commercial Machine Sales in Cleveland Show Big Increase

(Continued from Page 9, Column 5)

been in the bar and restaurant class.

"When beer came back, we got some nice installations; though we didn't go after the business very hard, because we figured it might be a catch-as-catch-can affair, as far as credit was concerned. What we did go after were the bigger jobs—hotels and restaurants, mostly.

"We figured that even though Cleveland wasn't a beer-drinking town, these places would be in business, if for nothing more than to accomodate their customers who might want a drink every now and then.

"Of course, the field has straightened itself out pretty well by now, and there's some nice business in beer cooling work."

No Retail Beer Stores

Mr. Tracy thinks there's room in Cleveland for at least one retail beer store, such as those which dot Chicago's outlying districts. At present, there isn't a one in the city.

"The corner drug stores handle beer now, and you can go in and buy a half dozen or dozen bottles—but there isn't a single place where they have cases cooled and ready to take out. There ought to be a nice profit here for at least one store of that kind—maybe more."

Beverage cooling, Mr. Tracy said, is a fairly live field at present, but the company hasn't been doing a lot with it. Things have changed in the beverage cooling field lately—the bottling companies, which formerly bought the coolers in large lots and distributed them among their dealers, have given this up—and it's now a case of selling the individual dealers, one at a time instead of in a group. Naturally, this makes the field less attractive than it used to be.

Replacement Business

Replacement business is beginning to be something of a factor in the field too.

Mr. Tracy hasn't had much of a problem as yet in disposing of used equipment, but lately he has been seriously considering the possibility of handling sales of reconditioned units through independent service companies. These latter concerns, he finds, are beginning to get more and more into the selling field, in addition to installation—and he thinks they should be logical outlets for some used equipment.

Sale of Reconditioned Units

Some of the smaller stores, he has found, would rather have good reconditioned equipment, when they can get it, because of its lower cost. Service companies are well acquainted with these prospects, and if they are going to sell some used units, Mr. Tracy figures they might as well sell his as anybody's.

In addition to giving him a ready outlet for used equipment, it will provide service companies with a source of reliable, reconditioned condensing units and should, he believes, prove advantageous to both sides.

Of course, this is largely speculation, for the market hasn't assumed serious proportions as yet. But when it does, Mr. Tracy figures that's just about the best way to handle it.

G-E Outlet Splits Up Territory And Boosts Commissions

Commercial department of Electrical Housekeeping, Inc., has been operating under a new system since the first of the year—a system, by the way, which seems to be working, for C. M. Rowland, commercial sales manager, reports that business is from 200 to 300% over what it was last year at this time.

Of course, the new setup can't be credited with having made all the improvement, Mr. Rowland hastens to add; commercial business generally is better than it has been. But there's no question but that it has had an important part in hastening the pick-up.

Handled by Distributor

Under the new system, the distributor has charge of the whole commercial sales and distribution activity in the whole territory covered. Cuyahoga county, in which the city of Cleveland is the population center, is handled by Electrical Housekeeping's own retail sales organization of seven men, working directly under Mr. Rowland; Summit county, with Akron as the main city, is handled by another organization of three men, who also work directly out of the distributorship.

The rest of the territory has been divided into three main areas, with three company representatives working in them. Youngstown is the population center of one of the areas, and Canton of a second; the third, larger in size than either of the others, has no large towns.

'Bird Dogs' Locate Prospects

In Cuyahoga and Summit counties, the sales force works directly through leads from friends and direct canvassing. In the other three territories, the salesmen work through "bird dogs," who look up prospects for them (at a commission), plus four men actively engaged in this prospect-hunting work, two in Youngstown and two in Canton.

These latter three territories represent the innovation in Electrical Housekeeping's commercial sales plan.

The three representatives working them are paid a high rate of commission—25%—out of which they pay their "bird dogs" for leads which result in sales.

Commission for these sales-helpers is 5%. The full-time men in Youngstown and Canton, as well as the members of the regular sales staffs in Cuyahoga and Summit counties are given a drawing account which is charged against their commissions.

Markets and Men

As far as the field of activity in commercial applications is concerned at present, Mr. Rowland says it is pretty well spread out in the metropolitan territories. In the country territories, however, he finds it revolves more around markets than men.

"Our three large areas," he said, "we've found, represent three different types of installations—beer cooling, display cases, and dairy and ice cream business. The only way we can figure this out is that the business represents the specialization of the individual salesman.

"One of the men, for instance, is an old meat salesman, and his interests are naturally closer to the grocer and butcher business than to any other. In his territory, our installations of this type are very heavy. The same thing applies to the other two, one of which has a very heavy percentage of beer cooling installations, the other an equally heavy run of ice cream and dairy applications.

May Have to Switch Men

"If these men are interested in one particular kind of business, they'll naturally pull the men working with them in that territory along the same line; and that, to us, accounts for the preponderance of one type of business so much over all the others. "If things keep on much longer as they're going now, it looks like we'll have to switch the men around, and put each of them in all of the three territories for a while. Then we'll be able to get a balanced share of the commercial business in all of them."

The company handles service and installation work in a 30-mile radius of both Cleveland and Akron, with its own installation and service department in both those cities.

Plan Used in Other Sections

In other sections of the territory, the company picks out a good dealer, or independent service company, and has it do all its installation and service work. All these smaller dealers, also, are limited to territories within a radius of 30 miles, giving the company an abundance of competent service throughout the area it covers.

"We've found that handling our service and installation work in this way, we're able to cover the whole territory easily and efficiently. Of course, we're careful to pick only the most reliable companies, the ones with the best local records, as service and installation dealers.

"To keep control of our service and installation work by these dealers, we have separate methods of payment for both installation and service.

"On installations, we give the company doing the work 85% of their payment when the installation work is done, and the other 15% after a month, when we've seen how well the job is operating.

How Service Is Handled

"A similar plan applies to service work. We pay two prices for every job—one for installation, the other for service. On the latter, we pay during the 'free service' or guarantee period—50% at the end of six months, and the rest at the end of the year, when the guarantee period ends.

"In this way, we can be sure that our service and installation work in the outlying territory is done properly—we hold back part of the payment, for a while, to be sure the work is done right.

"This plan is working out very well for us. Our installation work is handled properly, and service on the jobs is done regularly and systematically."

The company has installation service charges figured in on every job it sells. These are made at a flat rate.

Every job is checked over while it is still on paper, and care taken that all engineering details are right for the results which the customer expects.

Salesman's Estimate of Jobs

When the salesman makes his estimate, he is asked to state the installation's cost, what material will be used, and what the equipment is designed to accomplish. In most cases, the contract calls for the customer to furnish certain materials, the company others. These things, too, are carefully noted.

Price of all equipment is stated, and the allowances made for old equipment, if any. Also stated is the date when the job is to be installed.

In this way, the company has a complete record of every job it sells—from start to finish. The salesman's original estimate is retained, and checked against the final estimate on the job's actual cost, to see that the customer is receiving everything he thinks he is supposed to, and all terms of the agreement are carried out by all parties.

In connection with each sale, the representatives in the territories outside the two metropolitan counties also turn in to the company the names of the persons who were instrumental in turning the sale, together with the commission they are to receive. Payment of all commissions to these persons is handled direct by the company, and the total charged off against the salesman's regular commission on the job.

Plan from Salesman's Viewpoint

The new plan sounds good—but is it working out for salesmen?

In the three provincial territories, the representatives are men with years of experience in commercial selling, Mr. Rowland says.

"Since we put the plan into effect, these men have been averaging around $400 a month. This is in addition to the commissions they have paid to the persons who have helped them in their sales."

Despite its good fortune with salesmen in its outside territories, the company has had rather a hard time getting good men for its Cleveland office, Mr. Rowland said.

"Good producers are hard to get—and harder than that to hold," he added. "Competitors seem to be waiting around, ready to take away our best ones almost as soon as they stick their heads out of the crowd.

"Of course, we like to get our own salesmen that way, if we can. Only recently, a competitor took away some of our men with a salary offer. This meant regular cash to the men every week, and you can't really blame them for taking it. Our own pay scale is on commission only, and non-producers don't collect.

Good Men Are Hard to Hold

"Best men, naturally, are the hardest to hold. We have some fine men with us right now, but you can never tell how long they'll stay. Somebody else may come along with a juicy offer any time, and take them right from under us.

"When this happens, it naturally slows up our sales. New men are not easy to train, and most of them don't produce much during the first three months.

"We train them hard for two weeks, and then send them out on their own, in the Cleveland and Akron territory. After we find out how well they mix theory and practice, one of us here at the office takes them in hand and tries to iron out their rough spots." The company has regular daily sales meetings, before the start of the day's work. It's a sort of a round-table affair, with a discussion of sales problems encountered and suggestions on how best to meet them. The salesmen get a lot of good out of these meetings, Mr. Rowland says. While some of them needed a little urging to come to the first few meetings, most of them wouldn't think of missing one now.

Danforth Getting Ready to Push Westinghouse Commercial

At Danforth Refrigeration Co., Westinghouse distributor in the greater Cleveland territory, Salesmanager N. M. Forsythe, busy with a directors' meeting, took time out long enough to report that, while the company hadn't been in the commercial picture seriously as yet, it was planning to be in there from now on.

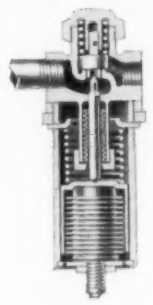
"Our commercial sales so far haven't been anything to speak of," he said, "Most of our selling emphasis has been on household units. But Westinghouse is beginning to make a bid for commercial business now, and we're getting ready to go after things in that field in a really serious way."

The company had just received one

(Continued on Page 13, Column 1)

M&E EST. 1866
COMMERCIAL DOMESTIC and BARE COMPRESSORS
1/6 to 10 H. P.
MERCHANT & EVANS CO.
MANUFACTURERS
..PHILADELPHIA..
EST. 1866 Plant: LANCASTER, PA.

20 QUALITY FEATURES



(No. 10)

Servel Bellows-Sealed Water Valves Conserve Water by Exact Regulation. They Are Permanently Leak-Proof.

COMPARE SPECIFICATIONS

Servel invites rigid comparison—of specifications, design, material, workmanship—of performance and economy. Check Servel's products for the features that you, as a distributor, must have—for the features that your prospects are demanding . . . Whether you consider price or disregard it, Servel is the outstanding line in Commercial Refrigeration and Air Conditioning for 1936 . . . Direct-factory franchises will be negotiated for a few good territories during May. Write or wire for the interesting details.

SERVEL
COMMERCIAL REFRIGERATION
SERVEL, INC. *Commercial Refrigeration Division* EVANSVILLE, IND.

This modern 33-acre plant is the home of Servel Commercial Refrigeration and the world-famous Electrolux, the Servel Gas Refrigerator

There is no Substitute for Experience

Curtis

Curtis Refrigerating Machine Co.
St. Louis, Mo.

Compressor—Balanced bellows shaft seal. Cylinder head cooled by air on small models, water on models 1 hp. and up. Controlled splash or patented pressure-type lubrication. Oil level measured by gauge port on small models, sight glass on models 1 hp. and up. Curtis compressor oil. Viscosity, L & R units, 150; H units, 300.

Condenser—Air-cooled models, fin type; water-cooled, counter-flow. Condenser located flywheel and pulley side.

Liquid receiver—Horizontal type. All models have fusible safety plug and refrigerant filter.

Materials used—Cylinder block and pistons: semi-alloy steel. Condenser tubing: copper. Condenser shell: pressed steel.

Control—Penn pressure or temperature control. All water-cooled models have high-pressure cutout. Thermal overload cutout. Condensing water flow controlled by pressure valve. Penn water-regulating valve.

Valves—Stainless wafer type intake and discharge valves.

Also Available — Gasoline engine driven units. Special units for refrigerated trucks both electric and gasoline engine driven.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
MAL-25-R	...	...	...	...	470	1,738	470	1,185	¼	2	1½ x 1¼	10	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts	24⅛ x 14⅞ x 16¾
MAR-25-R	...	...	420	2,189	420	1,551	...	...	¼	2	1½ x 1¼	10	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts	24⅛ x 14⅞ x 16¾
MAL-33-R	...	...	...	...	470	2,090	470	1,419	⅓	2	1½ x 1½	9	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	24⅛ x 14⅞ x 16¾
MAR-33-R	...	...	420	2,629	420	1,870	...	...	⅓	2	1½ x 1½	9	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	24⅛ x 14⅞ x 16¾
MWL-33-R	...	...	...	...	520	2,816	520	2,112	⅓	2	1½ x 1½	9	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	1½ pts.	24⅛ x 19½ x 19¼
MWR-33-R	...	...	470	6,420	470	2,519	...	...	⅓	2	1½ x 1½	9	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	1½ pts.	24⅛ x 19½ x 19¼
MAL-50-R	...	...	...	...	425	3,190	425	2,178	½	2	1⅞ x 1⅝	23	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2½ pts.	29⅜ x 16¾ x 21½
MAR-50-R	...	...	375	3,610	375	2,816	...	...	½	2	1⅞ x 1⅝	23	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2½ pts.	29⅜ x 16¾ x 21½
MWL-50-R	...	...	...	...	475	4,510	475	3,234	½	2	1⅞ x 1⅝	24	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2½ pts.	29⅜ x 23 x 21½
MWR-50-R	...	...	425	5,412	425	3,872	...	...	½	2	1⅞ x 1⅝	24	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2½ pts.	29⅜ x 23 x 21½
MAL-75-R	...	...	...	...	475	4,345	475	2,959	¾	2	2⅛ x 1⅝	24	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2½ pts.	29⅜ x 16¾ x 22
MAR-75-R	...	...	425	5,445	425	3,861	...	...	¾	2	2⅛ x 1⅝	24	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2½ pts.	29⅜ x 16¾ x 22
MWL-75-R	...	...	...	...	525	5,940	525	4,235	¾	2	2⅛ x 1⅝	24	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2½ pts	29⅜ x 23 x 22
MWR-75-R	...	...	475	7,348	475	5,247	...	...	¾	2	2⅛ x 1⅝	24	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2½ pts	29⅜ x 23 x 22
MAL-100-R	...	...	...	...	400	7,122	400	4,862	1	2	2⅛ x 3	31	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts	34¾ x 21⅛ x 26
MAR-100-R	..	...	350	8,448	350	6,006	...	...	1	2	2⅛ x 3	31	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts	34¾ x 21⅛ x 26
MWL-100-R	...	...	...	...	450	10,175	450	7,315	1	2	2⅛ x 3	31	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	34¾ x 26½ x 26
MWR-100-R	...	...	400	12,100	400	8,607	...	...	1	2	2⅛ x 3	31	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	34¾ x 26½ x 26
MWH-100AC*	375	15,120	...	...	...	...	...	...	1	2	2⅛ x 3	31	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	34¾ x 26½ x 26
MAL-150-R	...	...	...	...	450	9,790	450	6,666	1½	2	2½ x 3	31	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	34¾ x 21⅛ x 26
MAR-150-R	...	...	400	11,600	400	8,328	...	...	1½	2	2½ x 3	31	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	34¾ x 21⅛ x 26
MWL-150-R	...	...	...	...	500	15,400	500	10,230	1½	2	2½ x 3	31	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	34¾ x 26½ x 28½
MWR-150-R	...	...	450	16,555	450	11,825	...	...	1½	2	2½ x 3	31	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	34¾ x 26½ x 28½
MWH-150AC*	425	20,680	...	...	...	...	...	...	1½	2	2½ x 3	31	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	34¾ x 21⅛ x 26¾
MAL-200-R	...	...	...	...	625	20,350	625	14,620	2	2	2½ x 3	31	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	34¾ x 21⅛ x 26¾
MAR-200-R	...	...	575	16,665	575	11,825	...	...	2	2	2½ x 3	31	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	34¾ x 21⅛ x 26¾
MWL-200-R	400	...	...	...	...	...	...	...	2	2	3 x 3	31	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	34¾ x 26½ x 28½
MWR-200-R	...	...	350	24 585	350	17,580	...	...	2	2	3 x 3	31	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	34¾ x 26½ x 28½
MWH-200AC*	575	30,470	...	...	...	...	...	...	2	2	3 x 3	31	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	34¾ x 26½ x 28½
MAL-300-R	...	...	...	...	450	18,480	450	12,320	3	2	3 x 3½	41	12 lbs	CH_3Cl	Air	Open	Reciprocating	Belt	6 pts.	42⅛ x 28¾ x 29¾
MAR-300-R	...	...	400	22,550	400	16,330	...	...	3	2	3 x 3½	41	12 lbs	CH_3Cl	Air	Open	Reciprocating	Belt	6 pts.	42⅛ x 28¾ x 29¾
MWL-300-R	...	...	...	...	500	24,750	500	17,820	3	2	3 x 3½	41	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	47½ x 32¼ x 30¼
MWR-300-R	...	...	450	31,680	450	22,600	...	...	3	2	3 x 3½	41	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	47½ x 32¼ x 30¼
MWH-300AC*	400	41,800	...	...	...	...	...	...	3	2	3 x 3½	41	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	47½ x 32¼ x 30¼
MAL-500-R	...	...	...	...	525	28,050	525	19,030	5	2	3½ x 3½	41	16 lbs	CH_3Cl	Air	Open	Reciprocating	Belt	6 pts.	42⅛ x 30¼ x 29¾
MAR-500-R	...	...	475	34,760	475	25,300	...	...	5	2	3½ x 3½	41	16 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	6 pts.	42⅛ x 30¼ x 29¾
MWL-500-R	...	...	...	...	560	57,180	560	25,300	5	2	3½ x 3½	41	16 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	47½ x 32¼ x 30½
MWR-500-R	...	...	510	48 950	510	34,980	...	...	5	2	3½ x 3½	41	16 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	47½ x 32¼ x 30½
MWH-500AC*	475	67,600	...	...	...	...	...	...	5	2	3½ x 3½	41	16 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	47½ x 32¼ x 30½
MWL-750-R	...	...	...	...	575	77,550	575	55,825	7½	4	3 x 3¾	77	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	64¾ x 39¼ x 33¾
MWR-750-R	...	...	525	79 200	525	56,760	...	...	7½	4	3 x 3¾	77	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	64¾ x 39¼ x 33¾
MWH-750AC*	475	106,700	...	...	...	...	...	...	7½	4	3 x 3¾	77	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	65¾ x 39 x 33¾
MWL-1000-R	...	...	...	...	575	84,700	575	61,160	10	4	3½ x 3¾	77	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	65¾ x 39 x 35½
MWR-1000-R	...	...	525	107,800	525	77,000	...	...	10	4	3½ x 3¾	77	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	65¾ x 39 x 35½
MWH1000AC*	500	152,350	...	...	...	...	...	...	10	4	3½ x 3¾	77	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts	65¾ x 39 x 35½
MWL-1500-R	...	...	...	...	525	155,100	525	111,650	15	8	3½ x 3¾	115	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	14 pts.	91¾ x 45½ x 44¾
MWR-1500-R	...	...	525	158,400	525	106,000	...	...	15	8	3 x 3¾	115	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	14 pts.	91¾ x 45½ x 44¾
FWH-1500-AC	590	203,500	...	...	...	...	...	...	15	4	3½ x 3¾	168	18 lbs.	Freon	Water	Open	Reciprocating	Belt	7 pts.	65¾ x 39 x 35½
MWL-2000-R	...	...	...	...	575	169,400	575	122,100	20	8	3½ x 3¾	168	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	14 pts.	91¾ x 45½ x 44¾
MWR-2000-R	...	...	525	216,700	525	154,000	...	...	20	8	3½ x 3¾	168	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	14 pts.	91¾ x 45½ x 44¾
MWH2000AC*	500	304,700	...	...	...	...	...	...	20	8	3½ x 3¾	168	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	14 pts.	91¾ x 45½ x 44¾
MWL-2500-R	...	...	...	...	590	194,700	590	146,000	25	8	3½ x 3¾	250	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	14 pts.	91¼ x 45¾ x 54⅜
MWR-2500-R	...	...	590	272,800	590	194,700	...	...	25	8	3½ x 3¾	250	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	14 pts.	91¼ x 45¾ x 54¾
MWH2500AC*	550	355,850	...	...	...	...	...	...	25	8	3½ x 3¾	250	18 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	14 pts.	91¼ x 45¾ x 54⅜
FWH-3000-AC	590	407,000	...	...	...	...	...	...	30	8	3½ x 3¾	250	18 lbs.	Freon	Water	Open	Reciprocating	Belt	14 pts.	91¼ x 45¾ x 54⅜

*Also available with Freon as the refrigerant. Units charged with Freon operate 10% slower than CH_3Cl units. Pump-down capacity of receiver for Freon 50% greater than for methyl.

M & E

Merchant & Evans Co.
Philadelphia, Pa.

Compressor—Sylphon shaft seal. Cylinder head cooled by air and water. Splash-type lubricating system. Suniso compressor oil, with viscosity 280 at 100°.

Condenser—Fin type. Location of condenser: full length of base.

Liquid receiver—Horizontal type.

Materials used—Cylinder block, semi-steel. Pistons, cast iron. Condenser tubing: copper. Condenser shell: copper.

Controls—Detroit Lubricator and Penn pressure and temperature control. All models 1 hp. or larger have high pressure cutout. Cutler-Hammer and Allen-Bradley overload cutout. Condensing water flow controlled by water regulator. Penn water regulating valve.

Valves—Laminations.

Model No.	Refrigeration Capacity 23° R.p.m.	23° B.t.u.	14° R.p.m.	14° B.t.u.	5° R.p.m.	5° B.t.u.	-4° R.p.m.	-4° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
180MC ...	525	1,656	525	1,368	525	1,140	525	816	¼	2	1¼ x 1¼	3½	2½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	⅝ pts.	18 x 15 x 14
250MC	535	2,404	535	1,949	535	1,572	535	1,200	⅓	2	1⅝ x 1	4	2½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	¾ pts.	24 x 14½ x 15½
325MC	560	3,297	560	2,669	560	2,105	560	1,672	½	2	1⅝ x 1⅜	4	2½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	¾ pts.	30 x 22 x 18
450MC	552	4,707	552	3,827	552	2,868	552	2,347	¾	2	1⅝ x 2	14	7 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2¾ pts	33 x 18 x 21
725MC	405	7,560	405	6,120	405	4,815	405	3,672	1	2	2¼ x 2⅛	14	7 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3¼ pts.	36 x 23 x 23
1125MC ...	435	12,240	435	9,900	435	7,800	435	6,004	1½	2	2¼ x 3	14	7 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3¼ pts.	36 x 24 x 26
1825MC ...	275	16,200	275	13,200	275	10,560	275	8,164	2	2	2⅛ x 3	22	13 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts	48 x 27 x 21
C-400WMC	480	4,692	480	3,660	480	2,820	480	2,160	½	2	1⅝ x 2	22	7 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2¾ pts.	36 x 18 x 21
C-450WMC	670	6,120	670	5,100	670	3,960	670	3,060	¾	2	1⅝ x 2	14	7 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2¾ pts.	36 x 19 x 21
C-725WMC	500	9,900	500	7,800	500	6,030	500	4,620	1	2	2¼ x 2⅛	14	7 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3¼ pts.	33 x 21 x 26
C-1125WMC	595	15,960	595	12,660	595	9,810	595	7,500	1½	2	2¼ x 3	28	13 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3¼ pts.	33 x 21 x 26
C-1825WMC	330	21,900	330	17,400	330	13,560	330	10,260	2	2	3¼ x 3½	36	13 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	50 x 26 x 27
C-2500WMC	510	33,900	510	26,700	510	21,000	510	15,900	3	2	3¼ x 3½	36	13 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	.....
C-3000WMC	295	33,900	295	26,700	295	21,000	295	15,900	3	2	3⅞ x 3⅞	72	24 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	9 pts.	.....
C-6500WMC	445	47,400	445	37,320	445	29,400	445	22,200	5	2	3⅞ x 3⅞	36	24 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	9 pts.	.....
C-10000WMC	340	72,000	340	57,000	340	44,400	340	33,900	7½	4	3⅞ x 3⅞	150	40 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	18 pts.	.....
C-15000WMC	425	96,000	425	75,600	425	59,400	425	45,000	10	4	3⅞ x 3⅞	150	40 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	18 pts.	.....

Norge

Norge Corp., Detroit, Mich.

Compressor—Balanced pressure bellows shaft seal. Pressure immersion type lubricating system. Oil level measured by bull's eye sight glass. Special dehydrated refrigeration oil.

Condenser—Air cooled: continuous fin tube. Water cooled: counterflow type. Air-cooled condensors located in rear of unit base, water-cooled condensers below base.

Liquid Receiver—Horizontal type except NA-25. All models equipped with fusible safety plug and refrigerant filter.

Controls—Pressure or temperature control. All water-cooled models have high pressure cutout. Type of overload cutout—resistance element trip. Condensing water flow controlled by pressure actuated water valve.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind*	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
DA-20	625	...	625	...	625	...	625	...	⅛	..	.....	...	...	SO_2	Air	Open	Rotary	Belt	...	18⅞ x 16⅞ x 13¾
NA-25	550	...	550	...	550	...	550	...	¼	..	.....	...	...	CH_3Cl	Air	Open	Rotary	Belt	...	21 x 17 x 13¾
XNA-25 ..	640	...	640	...	640	...	640	...	¼	..	.....	...	...	CH_3Cl	Air	Open	Rotary	Belt	...	24 x 17½ x 17
NA-33	635	...	635	...	635	...	635	...	⅓	..	.....	...	...	CH_3Cl	Air	Open	Rotary	Belt	...	24 x 17½ x 17
XNA-33 ..	400	...	400	...	400	...	400	...	⅓	..	.....	...	...	CH_3Cl	Air	Open	Rotary	Belt	...	24¾ x 17½ x 18
NW-33 ...	680	...	680	...	680	...	680	...	⅓	..	.....	...	...	CH_3Cl	Water	Open	Rotary	Belt	...	24 x 14½ x 17
XNW-33 .	450	...	450	...	450	...	450	...	⅓	..	.....	...	...	CH_3Cl	Water	Open	Rotary	Belt	...	24¾ x 17½ x 18
NA-50	630	...	630	...	630	...	630	...	½	..	.....	...	...	CH_3Cl	Air	Open	Rotary	Belt	...	24¾ x 17½ x 18
NW-50 ...	700	...	700	...	700	...	700	...	½	..	.....	...	...	CH_3Cl	Water	Open	Rotary	Belt	...	24½ x 14½ x 18
NA-75	550	...	550	...	550	...	550	...	¾	..	.....	...	...	CH_3Cl	Air	Open	Rotary	Belt	...	30 x 21 x 22¼
NW-75 ...	700	...	700	...	700	...	700	...	¾	..	.....	...	...	CH_3Cl	Water	Open	Rotary	Belt	...	30 x 17¾ x 20½
NA-100 ...	700	...	700	...	700	...	700	...	1	..	.....	...	...	CH_3Cl	Air	Open	Rotary	Belt	...	30 x 22 x 22¼
NW-100 ..	900	...	900	...	900	...	900	...	1	..	.....	...	...	CH_3Cl	Water	Open	Rotary	Belt	...	30 x 17¾ x 20½
NA-150 ...	900	...	900	...	900	...	900	...	1½	..	.....	...	..	CH_3Cl	Air	Open	Rotary	Belt	...	30 x 23⅝ x 22⅝

*Methyl chloride standard, but all except DA-20 are available with SO_2 or F-12 on special order.

Trade-ins, Self-Contained Display Cases And Uninformed Salesmen Disturb Cleveland Commercial Distributors

(Concluded from Page 11, Column 5)

of the new self-contained Winter-Aire display cases on which Westinghouse recently took over national distribution. Mr. Forsythe said it looked as if it would be a best seller.

Of the business the company has obtained this year, the majority has been on the equipment covered by Westinghouse's five-year guarantee. This guarantee, the longest offered in the commercial field, gives the company a long lead over competitors, and Mr. Forsythe is planning to capitalize on it to the greatest possible extent.

E. N. Downs is commercial sales manager of the company, and has under his direction several commercial salesmen, working the greater Cleveland territory.

C. V. Hill Cooperates Closely With Lipman Branch

This is the busy season for commercial cabinet equipment, it developed when we visited the Cleveland showroom of C. V. Hill Refrigerator Co., manufacturer of display and delicatessen cases, walk-in and reach-in coolers, and other store fixtures.

All members of the regular sales force were out of the city, busily working on sales leads, the young clerk, only person in the office, said.

The company works most of the northern Ohio territory out of its Cleveland headquarters, maintaining sales display offices in some of the other cities (notably Akron) for the convenience of prospects in looking over equipment. A half dozen salesmen are employed.

Hill Cooperates With Lipman

Hill's Cleveland office, the information is, works rather closely with General Refrigeration Sales Co.'s headquarters there. The latter company is doing a standout job in commercial, under the supervision of F. M. Angus, and the two organizations have found this cooperation mutually beneficial, the young man in the office said.

"We don't work with General Refrigeration Sales alone," the youth added, "but do have a closer tie-up with them than with any other refrigeration dealer in town. The way it works out here, most of the companies have one certain dealer they are pretty close with.

Exchange Prospects

"They give us the names of prospects for refrigerating machinery, and we go after them for display case or cooler equipment; and we do the same for them when we find a prospect for case equipment who looks as if he might be needing some refrigerating units."

Hill has three or four compressors listed in its equipment catalog, but the young man said. "We'd rather have a regular refrigeration company install the refrigeration equipment." However, where the prospect insists on obtaining all equipment from one source (for convenience in making time payments, we assume), the company will do the job for him. In this event, the installation work is done by an independent service company.

Competition of Self-Contained Jobs

A sidelight on the commercial situation:

Refrigeration distributors, in Cleveland especially, are finding their stiffest competition, not from one another, but from commercial refrigerator companies, who in most cases have a line of condensing units, independently manufactured, but carrying their own trade names. Refrigeration men claim the case companies will sell condensing units, at cost, just to obtain the commercial case business.

Cleveland refrigeration men are taking steps to remedy this situation, insofar as possible, and it is hoped some sort of an agreement can be reached soon. If conciliation fails, some of the distributors are threatening to take on a line of commercial cases, and meet their rivals at their own game.

This, they all agree, would be ruinous, as far as profits are concerned—but a majority of them seem determined to end the present situation, one way or another.

Getting back to the refrigeration picture from the Hill angle, sales in the Cleveland area are already 60% of what they were all during 1935, the office reported. Replacement business, not much of a factor previously, is becoming more so in this field, too.

Bollinger Says Poor Salesmen Set Up Obstacles to Sales

Over at Phoenix Ice Machine Co., Manager Harry E. Bollinger said business seemed to be largely dependent on weather conditions. While not so good in Cleveland, things were very encouraging in other cities in which the company operates, he reported.

"I wonder if our proximity to the lake has anything to do with it?" Mr. Bollinger wondered. "It seems to me the depressing weather we've had around here has affected business in and around Cleveland. In the parts of our territory off the lake region, we've found things much better."

Acts as Distributor

Phoenix operates principally as a distributor, except for the large ammonia machines. The company carries a complete line of standard condensing units, manufactured for it by Universal Cooler; the Taylor Freezer line of ice cream cabinets and equipment; and manufactures ammonia machines up to 50 tons capacity itself.

Out of its Cleveland office, the company has a sales force of five men, all of them with engineering experience and several years of sales background in the commercial field. Total territory covered by the company includes a 100-mile radius between Erie, Pa., and Sandusky, Ohio.

One very real trouble with the commercial field today, thinks Mr. Bollinger, is that there are entirely too many salesmen in it—too many, that is, who don't know the right answers.

"Commercial refrigeration selling is an entirely different proposition from household selling," Mr. Bollinger said. "But most of the companies in the business, it seems, haven't found that out as yet.

"When they take on a line of commercial equipment, their one idea seems to be to get as many salesmen in the field as possible, as quickly as possible. Commercial refrigeration salesmen must be trained men—you can't stick an ad in the paper, calling for salesmen, and pick up many men who'll be worth the trouble you spend training them.

Must Present Facts and Figures

"You may be able to do that with household refrigeration—but it won't work with commercial. Some of the companies, though, have been trying to operate under that system.

"What happens, then, is this: the streets are literally filled with commercial refrigeration salesmen—most of whom don't know what they're trying to do. When you go into a merchant's place to talk commercial to him, you've got to be able to give him facts and figures. There's nothing you can gloss over.

"Sometimes you've got to work with a prospect for months, even years, before you can bring him around to seeing your side of the story. There are few, if any, hurry-up sales in this business. It's easy to see that this requires an entirely different type of salesmanship than household refrigeration.

"When a new man gets into household refrigeration selling, his first calls are usually on his relatives and friends—and he often turns in a few sales soon after he starts in selling. Later, though, his sales begin to drop off—when he hits the people who don't know him and who aren't so apt to lend a sympathetic ear to his sales story. Then he gets disgusted and quits.

Sales Hard from Beginning

"It's much the same in commercial, with the exception that the sales are hard from the very beginning. The salesman gets disgusted and quits—but often not until he's unconsciously set up a situation which the men who are in the business regularly find it hard to overcome."

Salesmen employed by the company get most of their leads through direct canvassing, Mr. Bollinger said. More than 90% of the company's business is on the time-pavment plan, and repossessions have been anything but a problem.

"In the past four years, we've sold something around 1,600 jobs—and I don't believe we've had 16 repossessions." Which figures somewhere in the neighborhood of 1%.

The company has its own installation service department, to handle all its business in the Cleveland territory. In other cities, the work is handled through dealers in key cities, who maintain adequate departments to handle these branches of the work.

'Cut Price to Sell Case'

Competition from commercial refrigerator sales organizations, Mr. Bollinger said, is the toughest sort his organization is up against—and he's just about decided to do something about it.

"The biggest disadvantage," he said, "is that the companies will sell the refrigerating equipment at cost in order to get the order for the case. You can imagine what this does to competition, in the refrigeration line—it just about eliminates it altogether.

"Why the case companies want to get into this business I don't know. If it's not installed and engineered properly, the condensing unit is apt to give the most 'grief' in any commercial installation."

To Fight Fire with Fire

Mr. Bollinger hopes the situation is straightened out soon, but if it isn't, he has just about decided that the only way to compete with the situation is to take on a line of cases and play the game—that is, to sell one unit at cost in order to get the order for the other.

Only in this case, it will be the case, and not the condensing unit, which is sacrificed.

"It will cut down profits, of course," Mr. Bollinger said, "but in a case like this it's better to make a profit on one item and sacrifice it on the other, to make some sort of profit, at any rate. The way things stand now, even if we do get the sale, most of the profit is gone."

Trade-Ins Present Problem To Norge Distributor

Most of Norge's sales in the Cleveland territory have been in the industrial and dairy fields, according to Salesmanager C. H. Wilson of Strong, Carlisle & Hamond, Norge distributor for the northern Ohio territory.

General commercial business, too, has been good—better than last year, Mr. Wilson said. Straight commercial activity has been pretty evenly distributed among the ordinary applications—grocers, butcher shops, restaurants, and the like.

The company has three men working in the Cleveland territory, two salesmen in addition to a commercial supervisor. Throughout the territory, the company has also spotted its household dealers as "bird dogs," to turn in leads to the regular commercial men in return for a commission, in the event the lead results in a sale.

Prefer Smaller Installations

So far, the company hasn't gone out strongly after the larger installations, preferring to stay in the smaller applications, which can be handled by the Rollator compressor units. The company handles Seeger commercial cabinets.

Since last fall, the company has put in about 60 jobs, Mr. Wilson reported, of which about 20% were replacement installations.

"When we have to trade for used units, we do; but we try to keep away from it wherever we can. Most of the time, the units we do trade for are not good for much else than junk; so we just let the dealer keep his old one if he wants to. Some of the time we bring in the units and scrap them for the parts—just whatever we can get out of it."

Financing of Jobs

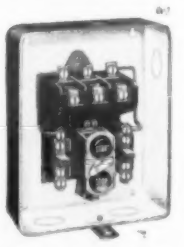
Most of the commercial jobs done by the company, Mr. Wilson said, are finance affairs—about 90% of them, in fact. The company handles its paper through Commercial Credit, and on some of the jobs terms as long as three years are allowed. In most cases, however, the terms don't go over 24 months.

FHA business now, as well as formerly, has been negligible. "As it stands now, the job would have to be worth at least $2,000 before it would be eligible for FHA financing. Not many of the jobs we do go that high—$500 would be nearer the correct figure.

"FHA did one thing, though. It brought down the finance rates. Now that people have the benefit of these lower charges, it's doubtful if they will permit the finance companies to go back to their old schedules. The government action at least showed that it could be done, and people are going to expect it from now on."

"Never dress the contacts of a Bulletin 709 Solenoid Starter"

Bulletin 709
An automatic solenoid starter for single and polyphase motors. Provides overload and no-voltage protection. Maximum rating: 30 hp, 220 v.; 50 hp, 440-550 volts.



Bulletin 609
A manual quick make-and-break starter for single and polyphase motors. Overload protection. Maximum rating: 5 hp, 220 v.; 7½ hp, 440-550 v.

The silver alloy contacts on the Bulletin 709 solenoid starter never need to be cleaned or "dressed." Any oxides that may form will not interfere in the least with their proper operation.

Think of what this means! Not only is a time consuming chore eliminated, but the starter is always in first class operating condition. Starters on inaccessibly located compressors, pumps, or fans are apt to be overlooked. Such applications are ideal for the Bulletin 709 solenoid starter. It welcomes neglect! Also, because contact life is not filed away, the double break silver alloy contacts will outlast several copper to copper contacts.

Allen-Bradley offers a complete line of maintenance free motor control equipment for the refrigerating and air conditioning industry. Among them are Bulletin 609 manual starters, Bulletin 700-200 control relays, Bulletin 705 reversing switches, Bulletin 715 multi-speed starters, and Bulletins 640, 740, and 742 resistance type starters. Most of these starters are available in any of seven types of enclosing cabinets—for every service condition. Write for descriptive bulletins and price forms.

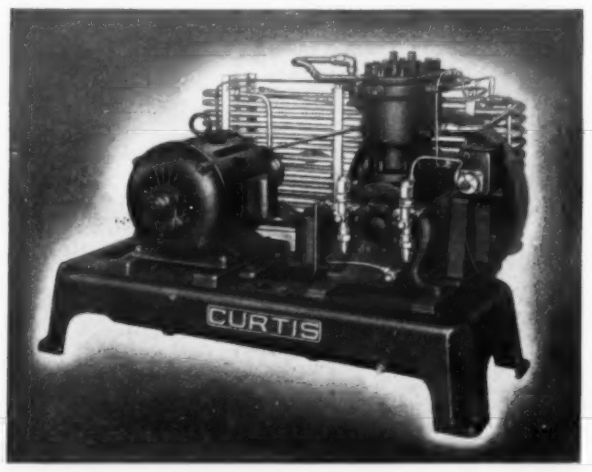
Allen-Bradley Company
1313 South First Street, Milwaukee, Wisconsin

A-B

ALLEN-BRADLEY
SOLENOID MOTOR CONTROL

CURTIS REFRIGERATION
Units to fit every need

Curtis, one of the oldestcompressor manufacturers, offers an unusually complete line of refrigerating units—1/6 to 2 H.P. air cooled; 1/3 to 30 tons water cooled—reflecting 82 years of successful engineering, designing and manufacturing experience. Some desirable territories are still open for reliable distributors.



ESTABLISHED 1854

Write for details.

CURTIS

CURTIS REFRIGERATING MACHINE CO.
Division of Curtis Manufacturing Company
1912 Kienlen Avenue, Saint Louis, U. S. A.
In Canada
CANADIAN CURTIS REFRIGERATION CO., LTD.
20 George Street, Hamilton, Ontario, Canada

Copeland

Copeland Refrigeration Corp.
Detroit, Mich.

Compressor—Bellows shaft seal. Water-cooled models have cylinder head cooled by water. Air-cooled models have cylinder head cooled by air. Splash-type lubricating system. Oil level measured by oil check plug. Suniso compressor oil. Viscosity of compressor oil: 200.

Condenser—Air-cooled models: fin tube. Water-cooled models: shell and tube.

Valves—Disc-type intake valves, reed-type discharge valves.

Liquid Receiver—Vertical and horizontal type. All water-cooled models have fusible safety plug. All models have refrigerant filter.

Controls—Penn pressure and temperature control. Models ½ hp. and larger have high pressure cutout. Thermal soft-solder overload cutout

Condensing water flow controlled by condensing pressure. Riley water-regulating valve.

Materials Used—Cylinder block and pistons: semi-steel. Condenser tubing: copper. Condenser shell: steel.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
IC-1	...	...	...	...	650	1,080	725	730	⅛	2	1¼ x 1⅛	2.6	1 lb.	CH_3Cl	Air	Open	Reciprocating	Belt	⅞ pt.	14 x 14½ x 25½
IC-2	...	...	...	...	515	1,875	570	1,550	¼	2	1½ x 1½	2.6	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	14 x 14½ x 25½
IC-3	...	...	...	...	440	3,300	515	2,400	⅓	2	2 x 1½	2.6	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	21⅝ x 11⅝ x 26⅛
R	390	5,650	440	4,400	440	3,300	515	2,400	½	2	2 x 1½	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	28 x 17⅝ x 19
RW	440	6,540	480	4,540	480	3,380	515	2,340	½	2	2 x 1½	18	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	28¼ x 14¾ x 18⅝
SA	575	7,700	640	5,700	640	3,840	640	2,610	¾	2	2 x 1½	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	28¼ x 18 x 19
W	225	9,550	260	6,840	260	4,720	300	3,780	¾	2	2¼ x 3	28	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	38¼ x 18½ x 27¼
WA	250	11,700	280	8,100	280	5,350	320	4,700	1	2	2¼ x 3	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	6 pts.	38¼ x 23⅞ x 24¾
X	325	15,150	365	10,770	365	7,770	425	5,850	1	2	2¼ x 3	25	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	38½ x 18½ x 27¼
XA	365	16,400	425	12,100	425	9,350	460	7,450	1½	2	2¼ x 3	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	6 pts.	39¼ x 23⅞ x 24¾
V	450	21,400	500	15,150	500	11,500	540	9,170	1½	2	2¼ x 3	25	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	38½ x 18½ x 27¼
Y	325	24,400	365	20,800	365	14,600	425	10,150	2	3	2¼ x 4	35	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	47½ x 21⅜ x 30
Z	440	35,800	500	28,300	500	20,000	500	12,750	3	3	2¼ x 4	35	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	47½ x 21⅜ x 30
AZ	540	44,250	540	30,600	...	...	...	...	5	3	2¼ x 4	35	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	47½ x 21⅜ x 30
M	575	2,073	650	1,500	650	1,080	725	730	¼	2	1¼ x 1⅛	2.6	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	⅞ pt.	...
P	440	3,750	515	2,690	515	1,875	570	1,550	⅓	2	1½ x 1½	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	...
PG	440	3,750	515	2,690	515	1,875	570	1,550	⅓	2	1½ x 1½	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	...
PW	480	4,590	515	3,700	515	2,530	570	1,780	⅓	2	1½ x 1½	18	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	...
RG	390	5,650	440	4,400	440	3,300	515	2,400	½	2	2 x 1½	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	...
SAW	575	7,770	640	6,550	640	4,590	640	3,370	¾	2	2 x 1½	18	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	...
XAG	365	16,400	425	12,100	425	9,350	460	7,450	1½	2	2¼ x 3	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	6 pts.	...
VA	450	23,000	500	17,000	500	12,500	540	9,900	2	2	2¼ x 3	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	6 pts.	...
CC-25	525	2,073	650	1,500	650	1,080	725	730	¼	2	1¼ x 1⅛	11	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	⅞ pt.	...
CC-33	440	3,940	515	2,960	515	2,070	570	1,710	⅓	2	1½ x 1½	11	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	...
CC-50	390	5,650	440	4,400	440	3,300	515	2,400	½	2	2 x 1½	11	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	...

Super-Cold

Super-Cold Corp.
1020 E. 59th St., Los Angeles, Calif.

Compressor—Rotary shaft seal. Cylinder head cooled by water or refrigerant. Splash lubrication. Oil level measured by height plug. Special Super-Cold compressor oil. Viscosity, 280/300.

Condenser—Fin tube, one-piece construction. Located on back rail of unit.

Liquid Receiver—Horizontal type. All models except A-14 have fusible safety plug. All models have refrigerant filter.

Materials Used—Cylinder block: semi-steel. Pistons: cast iron. Condenser tubing: copper.

Control—Penn pressure type. All water-cooled units and all air-cooled units of ¾-hp. and over have high pressure cut-out. Thermal overload cut-out on starter. Condensing water flow controlled by pressure. Penn or Electrimatic water-regulating valve.

Valves—Reed-type intake and discharge valves.

Special Features—Intake and discharge valves in head. Oil-retaining semi-gas cooled head.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind*	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
A-14	...	...	360	1,075	360	780	360	530	¼	2	1½ x 1⅜	2½	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1 pt.	20 x 15 x 11
AA-25	...	...	380	1,480	380	1,115	380	768	¼	2	1½ x 1⅜	7	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1 pt.	23 x 16 x 16½
AE-33	...	...	315	1,843	315	1,423	315	1,008	⅓	2	1⅝ x 1⅝	7	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	23 x 17 x 18
AE-33H	...	...	380	2,035	380	1,486	380	1,056	⅓	2	1⅝ x 1⅝	8½	7 lbs	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	26 x 18 x 18
WE-33H	...	...	380	2,312	380	1,775	380	1,200	⅓	2	1⅝ x 1⅝	8½	7 lbs	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	26 x 20 x 18
AG-50	445	3,820	445	2,868	445	2,173	445	1,488	½	2	2 x 1⅝	13	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	27 x 18 x 20
WG-50	445	4,270	445	3,330	445	2,560	445	1,728	½	2	2 x 1⅝	13	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2pts.	27 x 21 x 21
AJ-75	275	5,237	275	4,163	275	3,335	275	2,160	¾	2	2¼ x 2¼	20	9 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3 pts.	31 x 23 x 22
WJ-75	275	6,610	275	5,090	275	3,812	275	2,620	¾	2	2¼ x 2¼	20	9 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3 pts.	31 x 25 x 23
AK-100	275	8,600	275	5,780	275	4,476	275	3,000	1	2	2⅝ x 2¼	20	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	31 x 22 x 22
WK-100	275	10,250	275	6,650	275	5,090	275	3,456	1	2	2⅝ x 2¼	20	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	31 x 25 x 23
AL-150	335	12,700	335	9,250	335	7,100	335	4,800	1½	4	2¼ x 2¼	22	12 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	8 pts.	32 x 26 x 22
WL-150	335	14,900	335	12,900	335	8,420	335	5,690	1½	4	2¼ x 2¼	22	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	32 x 27¼ x 23
AN-200	335	15,100	335	11,300	335	8,460	335	5,760	2	4	2⅝ x 2¼	22	15 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	8 pts.	32 x 27½ x 22
WN-200	335	19,540	335	13,400	335	10,630	335	6,960	2	4	2⅝ x 2¼	22	15 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	32 x 29 x 23
AN-300	445	21,960	445	16,650	445	13,320	445	8,640	3	4	2⅝ x 2¼	44	30 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	8 pts.	37 x 27½ x 23½
WN-300	445	25,620	445	19,430	445	14,800	445	9,080	3	4	2⅝ x 2¼	44	30 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	37 x 28½ x 24

*Methyl chloride in all models unless otherwise specified. Equipment designed and constructed for use with CH_3Cl, F-12, and SO_2.

Frick

Frick Co.
Waynesboro, Pa.

Compressor—Bellows and lubricated ring type shaft seal. Cylinder head cooled by air or water. Splash lubrication. Oil level measured by sight glass. Frick compressor oil.

Condenser—Located between motor and compressor on all except FW-315FH and FW420 FH, under the motor.

Liquid Receiver—Horizontal type. All models equipped with fusible safety plug.

Materials Used—Cylinder block and pistons: cast iron. Condenser tubing: copper. Condenser shell: steel.

Control—Automatic low-pressure type. All water-cooled models have high-pressure cut-out. Thermal overload cut-out. Condensing water flow controlled by pressure-regulating valve.

Valves—Swedish steel disc-type intake and discharge valves.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
F-25M	...	...	...	...	525	1,550	525	1,140	¼	2	1½ x 1¼	7.8	2 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	1½ pts.	$25^{11}/_{16}$ x 17½ x 19½
F-33M	265	3,450	265	2,350	387	2,275	387	1,425	⅓	2	$1^{13}/_{16}$ x 1½	7.3	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	1¾ pts.	$25^{11}/_{16}$ x 17½ x $21^{5}/_{16}$
F-W33M	310	4,550	310	2,650	407	2,820	407	1,950	⅓	2	$1^{13}/_{16}$ x 1½	7.3	3½ lbs.	CH_2Cl	Water	Open	Reciprocating	V-Belt	1¾ pts.	$25^{11}/_{16}$ x 17½ x $21^{5}/_{16}$
F-50M W	265	4,850	265	3,075	430	3,500	430	2,450	½	2	2¼ x 1½	8.37	4 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	2 pts.	32 x 19⅛ x 22¼
FW-50M	330	6,850	330	4,420	460	4,050	460	2,900	½	2	2¼ x 1½	8.37	4½ lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	2 pts.	32 x 19⅛ x 22¼
F-75M	280	6,850	280	4,900	420	4,650	420	3,430	¾	2	2¼ x 2	8.37	4½ lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	3 pts.	32 x 19⅛ x 24⅝
FW-75M	350	10,000	350	6.250	515	6,800	515	4,450	¾	2	2¼ x 2	8.37	5 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	3 pts.	32 x 19⅛ x 24⅝
F-100M	240	10,400	240	7,000	365	7,600	365	5,400	1	2	2¼ x 3	15.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 24¾ x 29¼
FW-100M	300	14,000	300	9,000	420	8,800	420	6,200	1	2	2¼ x 3	15.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 24¾ x 29¼
F-150M	290	16,000	290	10,700	425	11,500	425	6,900	1½	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30¾
FW-150M	365	21,000	365	13,900	475	13,250	475	9,500	1½	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30
F-200M	380	19,700	380	13,100	535	13,300	535	9,450	2	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x30¾
FW-200M	455	27,500	455	19,100	640	17,300	640	12,150	2	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4½ pts.	28½ x 26 x 30
FW-300M	445	35,200	445	23,600	640	26,250	640	19,250	3	3	2½ x 3	27.8	12 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	7½ pts.	52½ x 24¾ x 32½
FW-500M	460	65,500	460	46,000	618	396,000	618	32,000	5	3	3¼ x 3	27.8	5 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	7½ pts.	52½ x 24¾ x 33
FW-750M	365	103,000	365	75,000	505	72,000	505	51,000	7½	3	4 x 4¼	47	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	12 pts.	$58^{11}/_{16}$ x 32⅝ x 39½
FW-1000M	440	131,000	440	90,300	570	78,000	570	56,300	10	3	4 x 4¼	47	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	12 pts.	$58^{11}/_{16}$ x 32⅝ x 39½
FW1500M	440	167,000	440	106,500	...	...	...	...	15	3	4 x 4¼	47	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	12 pts.	$58^{11}/_{16}$ x 32⅝ x 41¼
FW-315FH	514	171,600	514	117,840	514	83,400	514	59,520	15	3	4¼ x 4¼	...	...	Freon 12	Water	Open	Reciprocating	V-Belt	24 pts.	68⅞ x 24½ x 51½
FW420FH	514	234,000	514	157,080	514	111,360	514	79,320	20	4	4¼ x 4¼	...	...	Freon 12	Water	Open	Reciprocating	V-Belt	24 pts.	75 x 26 x 56

Howe

Howe Ice Machine Co.
Chicago, Ill.

Compressor — Bellows shaft seal. Cylinder head cooled by water. Splash-type lubrication. Oil level measured by sight glass.

Condenser—Shell and coil. Combination condenser and base.

Liquid Receiver—Horizontal type.

Control—Penn dual or high pressure. Models MW-2345, 2360, 2431, 2446 have high pressure cut-out. Cross line starting overload cut-out. Condensing water flow controlled by high pressure. Electrimatic water regulating valve.

Materials Used—Cylinder block and pistons, semi-steel. Condenser tubing and shell, steel.

Valves—Spring steel disc-type intake and discharge valves.

Special Features—Double trunk type piston.

Model No.	Refrigeration Capacity* 16° R.p.m.	16° B.t.u.*	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind†	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
MA-33	510	71,520	...	...	...	...	...	...	⅓	2	1½ x $1^{7}/_{16}$	...	3 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	2 pts	15½ x 21 x 15½
MA-5	635	89,280	...	...	...	...	...	...	½	2	1½ x $1^{7}/_{16}$	...	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	2 pts	15½ x 21 x 16
MA-75	550	126,960	...	...	...	...	...	...	¾	2	1⅝ x 2	...	10 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	3 pts.	21 x 30 x 24
MA-10	450	204,240	...	...	...	...	...	...	1	2	2¼ x 2⅛	...	10 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	3 pts.	21 x 30 x 25
MW-33	510	76,800	...	...	...	...	...	...	⅓	2	1½ x $1^{7}/_{16}$	...	3 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	2 pts.	14 x 28 x 16½
MW-5	635	99,000	...	...	...	...	...	...	½	2	1½ x $1^{7}/_{16}$	...	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	2 pts.	14 x 28 x 16½
MW-260	450	181,200	...	...	...	...	...	...	¾	2	2 x 2	...	10 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	2 qts.	17 x 35 x 29
MW-280	600	240,240	...	...	...	...	...	...	1	2	2 x 2	...	10 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	2 qts.	17 x 35 x 29
MN-390	500	288,000	...	...	...	...	...	...	1½	3	2 x 2	...	12 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	5 pts.	19½ x 37 x 29
MW-3120	650	393,120	...	...	...	...	...	...	2	3	3 x 2	...	12 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	5 pts.	20 x 38 x 29
MW-2345	450	711,360	...	...	...	...	...	...	3	2	3 x 3	...	12 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	3 qts.	21 x 53 x 30
MW-2360	600	948,520	...	...	...	...	...	...	5	2	3 x 3	...	15 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	3 qts.	21 x 66 x 30
MW-2431	310	1,152,000	...	...	...	...	...	...	7½	2	4 x 4	...	25 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4 qts.	26 x 60 x 48
MW-2446	465	1,728,000	...	...	...	...	...	...	10	2	4 x 4	...	25 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4 qts.	26 x 60 x 48

*Capacity given in B.t.u. per 24 hours at 16° suction temperature. †All models also available with Freon.

SPECIFICATIONS OF SELF-CONTAINED APPLICATIONS

PRESSURE TYPE WATER COOLERS

Kelvinator

Kelvinator Corp., Detroit, Mich.

Model No.	CW-1	CW-4	CW-6	CWC-4	CWC-6	CW-48	CW-612	HCB-48	HCB-612	WCW-3	WCW-612
Overall Dimensions (In.)											
Width	15⅞	21¼	21¼	21¼	21¼	21¼	21¼	34⅛	34⅛	21¼	21¼
Depth	19¾	24⅞	24⅞	24⅞	24⅞	20⅝	20⅝	19⅛	19⅛	24⅞	20⅝
Height	42⅜	43⅜	43⅜	43⅜	43⅜	45¼	45¼	19⅞	19⅞	43⅜	45¼
Capacity of unit, gallons	1	4	6	4	6	4-8*	6-12*	4-8*	6-12*	8	6-12*

*Small capacity if used for cup service, large capacity for bubbler service.

Condensing Unit											
Model No.	...	...	...	...	...	...	...	...	...	...	...
Compressor Model No.	..	B-9116	B-9125	B-9116	B-9125	B-9116	B-9125	B-9116	B-9125	B-9125	B-9125
Capacity (B.t.u./hr.)	...	...	...	...	...	...	...	...	...	...	...
Thickness of Insulation (In.)											
Top	2	2	2	2	2	2	2	2	2	2	2
Sides	2	3	3	3	3	3	3	3	3	3	3
Bottom	2	3	3	3	3	3	3	3	3	3	3

* * *

Cabinet
Make of cabinet ..... Kelvinator

Method of Cooling
Type of cooling.....Sleeve-type direct cooling
Make of coil used.....Kelvinator
Type of refrigerant control.....High side float
Make of refrigerant control....Kelvinator

Control
Type ..... Temperature
Make ..... Ranco

Compressor
Make of condensing unit..... Kelvinator
Sealed or open type ..... Open
Refrigerant used .....Sulphur Dioxide

Insulation
Kind.....Granulated cork on CW-1, Rock Wool on all others

Materials Used in Construction
Material on exterior finish....Sheet steel, Bonderized and painted inside and outside; 3 coats of lacquer
Finish of interior parts.....Nickel plated reservoirs

Special Features
Models CWC-4 and CWC-6 have storage compartment. Models CW-48, CW-612, HCB-48, HCB-612, WCW-612 equipped with precoolers.

Frigidaire

Frigidaire Corp., Dayton, Ohio.

Model No.	P-4	PC-4	B-4	BC-4	P-48	P-312	PW-312
Overall Dimensions (In.)							
Width	19	19	19	19	19	25	25
Depth	19	19	19	19	19	18⅝	18⅝
Height	43¼	43¼	43¼	43¼	41⅛	38¼	38¼
Capacity of cooler (g.p.h. 80° to 50°)	3.6	3.6	3.6	3.6	4 to 8*	6 to 12*	6.5 to 13*

*Depending on the amount of precooling.

Condensing Unit							
Model No.	1-AW	1-AW	1-AW	1-AW	1-AW	1-BW	W-1BW
Capacity (B.t.u./hr.)	...	...	...	...	...	...	...
Thickness of Insulation (In.)							
Top	...	...	...	...	...	...	...
Sides	...	...	...	...	...	...	...
Bottom	...	...	...	...	...	...	...

* * *

Cabinet
Make of cabinet .....Frigidaire

Method of Cooling
Type of cooling .....
Make of coil .....Frigidaire
Refrigerant control .....Automatic expansion valve
Make of refrigerant control.....Frigidaire

Control
Type .....Thermostat switch
Make .....Frigidaire
Model No. .....

Materials Used
Exterior & finish.....Bronze duco on steel
Interior & parts .....

Compressor
Make of condensing unit.....Frigidaire
Type of compressor.....Open
Refrigerant .....Sulphur dioxide

Insulation
Kind .....

Special Features
Models P-4, PC-4, B-4, and BC-4: Refrigerated compartment, easy action faucet, chrome-plated fittings, cold control. Models P-48, P-612, and PW-612: Precooling, automatic pressure regulator, cold control, acid resisting top and catch basin; PW-612, combination air and water-cooled condensing unit.

Westinghouse

Westinghouse Electric & Mfg. Co., Mansfield, Ohio.

Model No.	MT 8	SP 4	FWP 8	FWP 14	FWP 65	FPO 30
Overall Dimensions (In.)						
Width	18⅞	16	16	16	16	16
Depth	18⅞	15¼	15¼	15¼	15¼	15¼
Height	43	42½	42½	42½	42½	42½
Capacity of unit (gals./hr.)	7.1	4.0	7.6	14.4	6.2	3.0

Condensing Unit						
Condensing Unit Model No.	ASA-12H	ASA-12	AFA-16	WFA-16	WFB-33	
Compressor Model No.	...	...	...	...	...	
Capacity (B.t.u./hr.)	1138	1138	...	4180	...	...

* * *

Cabinet
Make of cabinet.....Westinghouse
Exterior material .....Sheet steel (Black micarta panels on MT-8)
Exterior finish .....Black Dulux
Finish of top.....Stainless steel (Black porcelain on cast iron in MT-8)
Finish of interior & parts...Nickel-plated brass

Insulation
Kind .....Granulated cork
Thickness .....2 in.

Control
Type .....Temperature control
Make .....Westinghouse
Model No. .....

Method of Cooling
Type of cooling.....Flooded coil storage type
Make of coil.....Westinghouse
Refrigerant control.....High side float
Make of refrigerant control..Westinghouse

Compressor
Make .....Westinghouse
Type.....FPO-30, open; others, sealed
Refrigerant.....MT-8 & SP-4, SO_2; others, Freon

Special Features
No precooler; ¾-in. unobstructed drain. Water-cooled compressor and motor on FWP-8, 14, and 65.

Norge

Norge Corp., Detroit, Mich.

Model No.	7 S-5	X7 S-5
Make of cabinet	...	...
Overall Dimensions (In.)		
Width	25¼	25¼
Depth	22	22
Height	36	36
Capacity of unit (g.p.h.)	7	7

Method of Cooling
Type of cooling.....Dry direct expansion
Make of coil .....
Type of refrigerant control.....Automatic
Make of refrigerant control.....

Control
Type ..... 11 Point temperature
Make .....

Compressor
Make of condensing unit..Norge Rollator
Condensing Model No. ....
Compressor Model No. ....
Sealed or open type ..... Open
Capacity (B.t.u./hr.) ....
Refrigerant used ..... SO_2

Insulation
Kind ..... Norge Approved
Thickness in top ....
Thickness in sides ....
Thickness in bottom ....

Materials Used in Construction
Materials on exterior and finish...Steel on steel frame, brown lacquer

Cordley & Hayes

Cordley & Hayes, New York, N. Y.

Model No.	TB-7
Overall Dimensions (In.)	
Width	15½
Depth	15½
Height	43
Capacity of unit (g.p.h.)	7.18

Cabinet
Make of cabinet.....Cordley & Hayes

Method of Cooling
Type of cooling.....Dry expansion
Make of coil.....
Type of refrigerant control.....Automatic expansion valve
Make of refrigerant control.....

Control
Type .....Thermostatic
Make .....

Compressor
Make of condensing unit .....
Condensing Model No. H-25
Compressor Model No. S-500
Sealed or open type.....Open
Capacity (B.t.u./hr.) 6.2
Refrigerant used ..... SO_2

Insulation
Kind ..... Gimco Rock Wool
Thickness in top ..... 3 in.
Thickness in sides ..... 4 in.
Thickness in bottom ..... 2 in.

Materials Used in Construction

General Electric

General Electric Co., Nela Park, Cleveland, Ohio.

Model No.	RM-21	RM-51	RM-61	RM-71
Overall Dimensions (In.)				
Depth	24½	19⅞	19⅞	19⅞
Width	18½	18⅞	18⅞	18⅞
Height	42⅜	42⅞	42⅞	42⅞
Capacity (Gallons per hr., 80° to 50°, 90° room)	3.8	3.8	10.5	12.2

Condensing Unit				
Model No.	...	...	...	...
Compressor Model No.	CM-303	CM-303	CM-303	CM-303
Capacity (B.t.u./hr.)	...	...	...	...

* * *

Cabinet
Make .....General Electric
Finish.....All steel cabinet
Bronze lacquer on glyptal

Method of Cooling
Type of cooling.....Flooded
Make of coil .....General Electric
Refrigerant control.....G-E float valve

Insulation
Kind .....Ground cork

Control
General Electric temperature control, model No. CR1057.

Compressor
Make of condensing unit.....G-E
Type .....Open
Refrigerant Freon-12

Special Features
Corrosion resistant water chamber.

Halsey Taylor

The Halsey W. Taylor Co., Warren, Ohio.

Model No.	250 & 257-P	251 267 267-P	251-MW 267-MW	277	350 357-W
Overall Dimensions (In.)					
Width	18	22	22	22	18
Depth	16	20	20	20	16
Height	39	39	39	39	39
Capacity of cooler (g.p.h.)	5 to 10	8 to 16	13.4	14	6.6

Condensing Unit					
Model No.	1652	1702	2017	1758	1973
Compressor Model No.	1643	1703	1945	1710	1945
Capacity (B.t.u./hr.)	1245	1992	3340	3486	1656
Refrigerant used	SO_2	SO_2	CH_3Cl	SO_2	CH_3Cl
Thickness of Insulation (In.)					
Top	2	2	2	2	2
Sides	2½	2½	2½	2½	2½
Bottom	2	2	2	2	2

* * *

Cabinet
Make of cabinet.....Halsey Taylor

Method of Cooling
Type of cooling.....
Make of coil .....
Refrigerant control.....Expansion valve
Make of refrigerant control.....Detroit Lubricator

Compressor
Make of condensing unit....Halsey Taylor
Type of compressor .....Open

Control
Type .....Thermostat
Make .....Cutler-Hammer in 250, 257-P & 277; Detroit Lubricator Model 250 in others

Insulation
Kind .....Cork

Materials Used
Exterior & finish.....Lacquered steel
Interior & parts .....

General Electric (Industrial Type)

General Electric Co., Nela Park, Cleveland, Ohio.

Model No.	KM-71	KM-73	KM-72	KM-74
Overall Dimensions (In.)				
Width	38⅝	38⅝	38⅝	38⅝
Depth	28½	28½	28½	28½
Height	46½	46½	46½	46½
Capacity (gal./hr. 80° to 50°, 90° room temperature)	...	...	...	...

Condensing Unit				
Model No.	CMF-4W	CMF-4W	CMF-4W	CMF-4W
Compressor Model No.	...	...	...	...
Capacity (B.t.u./hr.)	...	...	...	...

* * *

Cabinet
Make .....General Electric
Finish.....Olive-green enamel, on steel

Method of Cooling
Type of cooling.....Direct expansion
Make of coil .....
Refrigerant control.....Detroit Lubricator thermostatic expansion valve

Control
Penn back-pressure type.

Compressor
Make of condensing unit.....G-E
Type of compressor.....Open
Refrigerant Freon-12

Insulation
Kind .....Ground cork

Special Features
KM73 and 74 heavily insulated with controlled heater for low-temperature applications.

Stevenson Resigns As Rex Cole Sales Chief

NEW YORK CITY—Robert Stevenson has resigned as vice president, general manager, and director of the Rex Cole, Inc., General Electric distributor here.

Mr. Stevenson, who was made vice president of the Rex Cole, Inc. in 1931, has been connected with the company since its formation in 1927. Previous to that he held executive positions with Miller Co., and the General Electric Co. successively. His future plans will be announced when he returns from a six-weeks vacation.

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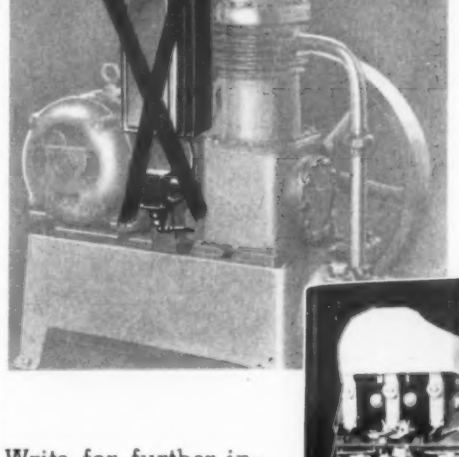

MEANS
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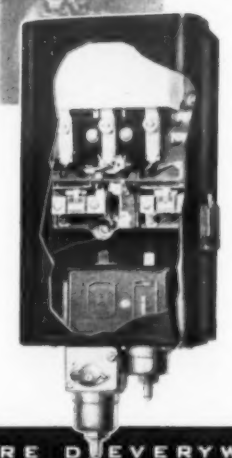

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SQUARE D COMPANY, CANADA LTD., TORONTO, ONTARIO

Lipman

General Refrigeration Sales Co.
Beloit, Wis.

Compressor—Bellows shaft seal. Cylinder head cooled by the refrigerant (water on ammonia models). Splash-type lubricating system. Oil level measured by crankcase sight glass. Low pour pale mineral oil.

Controls — Minneapolis-Honeywell pressure or temperature controls. All models have high pressure cutout. Thermal overload cutout on model 103 and larger, others optional. Condensing water flow controlled by pressure water regulator. Lipman water regulating valve.

Materials Used—Cylinder block: alloy, semi-steel. Pistons: alloy, cast iron. Condenser tubing and fins: copper. Condenser shell: steel.

Liquid Receiver—Horizontal liquid receiver. Fusible safety plug optional on all models. Models 32, 33, 54, 55, 72, 73, 102, 103, 152, 153, 202, 203 have refrigerant filter, other models optional.

Condenser — Water-cooled models; counterflow double-pipe type. Air-cooled models: fin tube. Located on rear side.

Valves—Ring disc intake and discharge valves.

Special Features: Valves in head, crankcase oil return level above seal. Special oil return check. Receiver liquid level indicator. Suction sight glass on models 303 to 1007. Pressure pulsation dampener on all models.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
32	240	3,800	280	2,800	280	2,070	325	1,540	⅛	2	1¾ x 2	7	4 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4 pts.	25½ x 16 x 17½
33	280	4,750	325	3,760	325	2,600	360	2,270	⅛	2	1¾ x 2	7	4 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4 pts.	25½ x 16½ x 17½
54	325	5,050	390	3,910	390	2,750	460	2,160	⅛	2	1¾ x 2	7	4 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4 pts.	25½ x 17½ x 17½
55	385	6,100	460	5,060	460	3,880	525	2,940	½	2	1¾ x 2	7	4 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4 pts.	25½ x 18 x 17½
72	275	7,700	320	6,270	320	4,860	370	3,900	¾	2	2⅜ x 2	15	6 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	8 pts.	31¾ x 19 x 23¾
73	300	10,400	350	8,200	350	5,960	410	4,360	¾	2	2⅜ x 2	15	6 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	8 pts.	31¾ x 20 x 23¾
102	345	9,400	400	8,400	400	6,020	460	4,900	1	2	2⅜ x 2	15	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	8 pts.	31¾ x 21½ x 23¾
103	400	14,600	460	10,800	460	7,640	425	5,800	1	2	2⅜ x 2	15	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	8 pts.	31¾ x 21 x 23¾
152	265	13,700	310	10,700	310	7,890	360	6,300	1½	2	2⅜ x 3¼	20	10 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	8 pts.	34½ x 24½ x 25½
153	310	18,000	360	14,000	360	10,600	415	8,060	1½	2	2⅜ x 3¼	20	10 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	8 pts.	34½ x 26 x 25½
202	360	18,500	425	14,700	425	10,700	490	8,450	2	2	2⅜ x 3¼	20	12 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	8 pts.	34½ x 26½ x 25½
203	420	24,400	490	19,000	490	14,400	565	10,900	2	2	2⅜ x 3¼	20	12 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	8 pts.	34½ x 27 x 25½
303	320	36,800	370	28,500	370	21,200	420	15,100	3	4	2⅜ x 3¼	55	....	CH_3Cl	Water	Open	Reciprocating	V-Belt	20 pts.	44¾ x 25⅞ x 30½
503	500	56,000	580	43,400	580	31,800	650	23,700	5	4	2¾ x 3¼	55	....	CH_3Cl	Water	Open	Reciprocating	V-Belt	20 pts.	44¾ x 25⅞ x 30½
301	530	33,700	590	25,900	590	18,500	...	...	3	2	2⅜ x 3¼	28	....	Freon	Water	Open	Reciprocating	V-Belt	8 pts.	36½ x 27 x 25½
305	280	35,200	325	27,800	325	20,000	...	...	3	4	2⅜ x 3¼	70	....	Freon	Water	Open	Reciprocating	V-Belt	20 pts.	44¾ x 25⅞ x 30½
505	470	56,500	540	43,300	540	31,200	...	...	5	4	2⅜ x 3¼	70	....	Freon	Water	Open	Reciprocating	V-Belt	20 pts.	44¾ x 25⅞ x 30½
757	340	97,500	390	73,600	390	51,000	...	...	7½	4	3¼ x 4	95	....	Freon	Water	Open	Reciprocating	V-Belt	28 pts.	54⅞ x 33½ x 33⅜
1007	450	128,800	520	102,000	520	71,800	...	...	10	4	3¼ x 4	95	....	Freon	Water	Open	Reciprocating	V-Belt	28 pts.	54⅞ x 33½ x 33⅜
A-107	240	13,800	280	9,500	280	6,650	325	5,250	1	2	2⅜ x 3¼	13	....	Ammonia	Water	Open	Reciprocating	Belt	8 pts.	38½ x 24 x 26
A-157	360	20,200	420	15,000	420	9,900	490	7,900	1½	2	2⅜ x 3¼	13	....	Ammonia	Water	Open	Reciprocating	Belt	8 pts.	38½ x 25½ x 26

Mills

Mills Novelty Co.
4100 Fullerton Ave., Chicago, Ill.

Compressor—Mills sylphon shaft seal. Cylinder head cooled by air or water. Splash and force-feed lubrication. Oil level measured by plug on crankcase. Argon compressor oil, viscosity 300.

Condenser—Finned, shell and tube, tube and tube. Location: under base on water-cooled models, on back of base on air-cooled models.

Liquid Receiver—Horizontal type. All models equipped with refrigerant filter.

Materials Used—Cylinder block, cast iron; pistons, cast iron; condenser tubing, copper; condenser shell, copper.

Control—Penn thermostat or low pressure. Models of ½-hp. or more have high pressure cut-out. Heater element overload cut-out. Condensing water flow controlled by pressure or thermostat. Penn water regulator.

Valves—Reed type in head intake and discharge valves.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump* Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
301	...	...	...	...	...	...	...	...	⅛	2	1½ x 1½	5	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3 pts.	19¾ x 18½ x 12½
303	...	...	...	...	...	...	...	...	¼	2	1½ x 1½	5	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3 pts.	19¾ x 18½ x 12½
304	...	...	...	...	...	...	...	...	⅓	2	1½ x 1½	5	3 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3 pts.	19¾ x 18½ x 12½
305	...	...	...	...	...	...	...	...	⅓	2	1½ x 1½	5	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3 pts.	19¾ x 18½ x 12½
306	...	...	...	...	...	...	...	...	⅓	2	1½ x 1½	5	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3 pts.	19¾ x 18½ x 12½
307	...	...	...	...	...	...	...	...	½	2	2 x 2½	10	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	19½ x 21 x 14½
308	...	...	...	...	...	...	...	...	½	2	2 x 2½	10	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	19½ x 21 x 14½
309	...	...	...	...	...	...	...	...	¾	2	2 x 2½	12	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	19½ x 23 x 14½
316	...	...	...	...	...	...	...	...	¾	2	2 x 2½	12	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	19½ x 23 x 14½
317	...	...	...	...	...	...	...	...	¾	2	2 x 2½	12	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	19½ x 23 x 14½
318	...	...	...	...	...	...	...	...	1	2	2¼ x 3	15	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	23½ x 39 x 27
320	...	...	...	...	...	...	...	...	1	2	2¼ x 3	15	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	19½ x 39 x 27
325	...	...	...	...	...	...	...	...	1½	2	2¼ x 3	15	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 pts.	19½ x 39 x 27
330	...	...	...	...	...	...	...	...	1½	2	2¼ x 3	15	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	24 x 39 x 27
334	...	...	...	...	...	...	...	...	2	2	2¼ x 3	15	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 pts.	24 x 39 x 27
338	...	...	...	...	...	...	...	...	1	2	2¼ x 3	25	8 lbs.	F-12	Water	Open	Reciprocating	Belt	5 pts.	19½ x 39 x 27
342	...	...	...	...	...	...	...	...	1½	2	2¼ x 3	25	8 lbs.	F-12	Water	Open	Reciprocating	Belt	5 pts.	24 x 39 x 27
346	...	...	...	...	...	...	...	...	3	2	2¼ x 3	25	8 lbs.	F-12	Water	Open	Reciprocating	Belt	5 pts.	26 x 41 x 27
360	...	...	...	...	...	...	...	...	2	4	2¼ x 3	30	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	34 x 53 x 33
361	...	...	...	...	...	...	...	...	2	4	2¼ x 3	30	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	7 pts.	34 x 53 x 33
363	...	...	...	...	...	...	...	...	3	4	2¼ x 3	30	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7 pts.	34 x 53 x 33
366	...	...	...	...	...	...	...	...	3	4	2¼ x 3	40	10 lbs.	F-12	Water	Open	Reciprocating	Belt	7 pts.	34 x 53 x 33
370	...	...	...	...	...	...	...	...	5	4	2¼ x 3	60	10 lbs.	F-12	Water	Open	Reciprocating	Belt	7 pts.	27 x 47 x 27
373	...	...	...	...	...	...	...	...	7½	4	2¼ x 3	60	10 lbs.	F-12	Water	Open	Reciprocating	Belt	7 pts.	34 x 53 x 33

*Special receivers furnished for high back-pressure equipment.

Kellogg

Kellogg Compressor & Mfg. Corp.
Rochester, N. Y.

Compressor—Balanced sylphon bellows shaft seal. Cylinder head air cooled. Splash lubrication. Oil level measured by oil filler plug. Stanco water white compressor oil.

Condenser—Finned tube, double row, double pass. Located at back.

Liquid Receiver—Horizontal type.

Materials Used—Cylinder block: semi-steel. Pistons: special gray iron. Condenser tubing and shell: copper.

Control—Cutler-Hammer temperature-pressure. All water-cooled models have high pressure cutout. Pressure-type overload cut-out. Condensing water flow controlled by pressure valve.

Valves—Three-leaf silent flex intake valves, one-leaf silent flex discharge valves.

Special Features—Valve plate carries both suction and discharge valves. Suction gas taken directly into cylinder head on low pressure side with oil return hole drilled to crankcase.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
A-46-25	300	2,350	345	1,675	410	1,450	410	800	..	1	2 x 1½	5	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1 pt.	28 x 18 x 18
A-46-33	350	3,390	445	2,650	460	2,200	460	1,570	..	1	2 x 1½	5	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1 pt.	28 x 18 x 18
A-47-50	345	4,500	440	3,800	485	3,360	485	2,320	..	2	2 x 1½	5	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	28 x 19 x 19
A-47-75	430	7,180	550	5,550	565	4,400	565	3,100	..	2	2 x 1½	5	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	28 x 19 x 19
W-46-33	400	4,020	500	3,200	500	2,650	500	1,805	..	1	2 x 1½	5	3 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	1 pts.	28 x 18 x 18
W-47-50	440	5,380	510	4,600	530	3,740	530	2,520	..	2	2 x 1½	5	3 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	28 x 19 x 19
W-47-75	550	8,900	640	7,100	675	6,400	675	5,000	..	2	2 x 1½	5	3 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	28 x 19 x 19

Mayflower

Hardy Mfg. Co., Inc., Dayton, Ohio.

Compressor—Diaphragm shaft seal. Cylinder head cooled by water and air. Splash-type lubricating system. Oil level measured by inspection plug. Type of compressor oil: Suniso No. 3 for SO_2. Suniso No. 4 for CH_3Cl. Viscosity of compressor oil: Suniso No. 3—150 at 100° F.; Suniso No. 4—300 at 100° F.

Condenser—Air cooled: fin tube. Water cooled: double tube. Location of condenser: flywheel side of unit.

Liquid Receiver—Horizontal type. All models have fusible safety plug. Refrigerant filter extra.

Materials Used—Cylinder block and pistons: cast iron. Condenser tubing: copper.

Controls—Penn pressure or thermostatic control. All water-cooled models, and all air-cooled models ½ hp. and up have high pressure cutout. Penn pressure water regulating valve.

Valves—Disc-type intake and discharge valves.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
2025-AS	...	...	350	1,728	350	1,584	350	1,440	¼	2	1⅜ x 1¾	5	2½ lbs.	CH_3Cl*	Air	Open	Reciprocating	Belt	1½ pts.	18¾ x 17 x 15¾
2033-A	...	...	450	2,448	450	2,016	450	1,728	⅓	2	1⅜ x 1¾	5	2½ lbs.	CH_3Cl*	Air	Open	Reciprocating	Belt	1½ pts.	22½ x 15¾ x 17
3033-W	...	...	430	5,472	430	3,600	430	2,880	⅓	2	1⅝ x 2	10	4 lbs.	CH_3Cl*	Air-Water	Open	Reciprocating	Belt	2¼ pts.	29½ x 21 x 20
3050-W	430	8,972	430	5,472	430	3,600	430	3,600	½	2	1⅝ x 2	10	4½ lbs.	CH_3Cl*	Air-Water	Open	Reciprocating	Belt	2¼ pts.	28½ x 20 x 21
4075-W	...	...	365	6,912	365	6,072	365	3,160	¾	2	2⅛ x 2½	10	4½ lbs.	CH_3Cl*	Air-Water	Open	Reciprocating	Belt	3 pts.	29¼ x 20 x 21
4100-W	365	12,528	365	6,912	365	6,072	365	3,160	1	2	2⅛ x 2½	12	4½ lbs.	CH_3Cl*	Air-Water	Open	Reciprocating	Belt	3 pts.	37¼ x 26 x 26
5100-W	...	...	...	...	...	...	310	5,472	1	2	2½ x 3	12	6½ lbs.	CH_3Cl*	Air-Water	Open	Reciprocating	Belt	4 pts.	37¼ x 26 x 26
5150-W	310	16,316	310	10,840	310	7,488	310	5,472	1½	2	2½ x 3	12	6½ lbs.	CH_3Cl*	Air-Water	Open	Reciprocating	Belt	4 pts.	37¼ x 26 x 28
5200-W	485	21,744	485	14,400	485	10,308	485	7,344	2	2	2½ x 3	12	6½ lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	37¼ x 26 x 28

*Sulphur Dioxide Optional.

Chieftain

Tecumseh Products Co.
Tecumseh, Mich.

Compressor — Bellows shaft seal. Cylinder head air-cooled. Forced feed and Splash lubricating system. Oil level measured by oil level gauge Suniso and Standard Oil compressor Oil. Viscosity of compressor oil: Suniso 110; Standard—250.

Condenser—Fin tube condenser, located across length of base.

Liquid Receiver—Vertical type.

Material used—Cylinder block and Pistons: semi-steel. Condenser tubing: copper.

Valves—Reed intake and discharge valves.

Control—Tag.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
S14-2	425	2,200	550	1,720	550	1,180	...	...	¼	2	$1^7/_{16}$ x $1^7/_{16}$	4	2 lbs.	SO_2	Air	Open	Reciprocating	Belt	1½ pts.	22 x 15 x 14½
S13-2	600	3,040	675	2,100	675	1,400	...	...	⅓	2	$1^7/_{16}$ x $1^7/_{16}$	4	2 lbs.	SO_2	Air	Open	Reciprocating	Belt	1½ pts.	22 x 15 x 14½
S14-1	600	1,590	600	1,060	600	...	...	...	¼	1	$1^7/_{16}$ x $1^7/_{16}$	4	2 lbs.	SO_2	Air	Open	Reciprocating	Belt	1 pt.	22 x 15 x 14½
M14-2	350	2,310	425	1,920	425	1,340	...	...	¼	2	$1^7/_{16}$ x $1^7/_{16}$	3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	22 x 15 x 14½
M13-2	450	3,000	550	2,420	550	1,720	...	...	⅓	2	$1^7/_{16}$ x $1^7/_{16}$	3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	22 x 15 x 14½
M14-1	500	1,720	500	1,100	500	...	...	...	¼	1	$1^7/_{16}$ x $1^7/_{16}$	3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1 pt.	22 x 15 x 14½

BOTTLE WATER COOLERS

Kelvinator

Kelvinator Corp., Detroit, Mich.

Model No.	BW-1	BW-4	BWC-4
Overall Dimensions (In.)			
Width	15⅞	21¼	21¼
Depth	19¾	24⅞	24⅞
Height	42⅜	43½	43½
Capacity of unit (gallons)	1	4	4
Condensing Unit			
Compressor Model No.	...	B-9116	B-9116
Capacity (B.t.u./hr.)	...	...	...
Thickness of Insulation (In.)			
Top	2	2	2
Sides	2	3	3
Bottom	2	3	3

Frigidaire

Frigidaire Corp., Dayton, Ohio.

Model No.	P-1	B-1
Overall Dimensions (In.)		
Make of cabinet	Frigidaire	
Width (diameter)	18	18
Height	41⅛	56
Capacity of unit, cooling 80° to 50° (gal./hr.)	1½	1½

Method of Cooling
Type of cooling
Make of coil used ..... Frigidaire
Type of refrigerant control..... Restricter
Make of refrigerant control..... Frigidaire

Control
Type ..... Thermostat switch
Make ..... Frigidaire

Compressor
Make of condensing unit..... Frigidaire
Condensing unit model No.
Compressor model No.
Sealed or open type ..... Sealed
Capacity (B.t.u./hr)
Refrigerant used F-114

Insulation
Kind
Thickness

Materials Used in Construction
Material on exterior and finish...Bronze duco on steel

Cabinet
Make of cabinet ..... Kelvinator

Method of Cooling
Type of cooling..... Sleeve-type direct cooling
Make of coil ..... Kelvinator
Refrigerant control..... High side float
Make of refrigerant control.... Kelvinator

Control
Type ..... Temperature
Make ..... Ranco
Model No.

Compressor
Make of condensing unit..... Kelvinator
Type of compressor ..... Open
Refrigerant ..... Sulphur dioxide

Insulation
Kind..... BW-1, granulated cork; others, Rock Wool

Materials Used
Exterior & finish..... Sheet steel, bonderized and painted inside and outside, 3 coats of lacquer
Interior & parts..Chrome-plated reservoir

Special Features
BWC-4 has compartment for storage.

Cordley & Hayes

Cordley & Hayes, New York, N. Y.

Make of cabinet..... Cordley & Hayes
Model No. B-3

Overall Dimensions (In.)
Width 15½
Depth 15½
Height 40½
Capacity of unit (g.p.h.) 2

Method of Cooling
Type of cooling ..... Dry expansion
Make of coil.....
Type of refrigerant control..... Expansion valve
Make of expansion valve.....

Control
Type ..... Thermostatic

Compressor
Make of condensing unit.....
Condensing Model No. H-16
Compressor Model No. S-500
Sealed or open type ..... Open
Capacity (B.t.u./hr.)..... 3.25
Refrigerant used ..... SO_2

Insulation
Kind ..... Gimco Rock Wool
Thickness in sides ..... 4 in.
Thickness in bottom ..... 2 in.

Materials Used in Construction
Material on exterior finish...Ground coat, graining ink, clear lacquer finishing coat

Westinghouse

Westinghouse Electric & Mfg. Co.
Mansfield, Ohio.

Model No. SB-4
Make of cabinet ..... Westinghouse

Overall Dimensions (In.)
Width 17⅜
Depth 20⅛
Height—without bottle 40⅞
Height—with bottle, approximately.. 56
Capacity of unit (gals./hr.)
85°-50°, 80° room temperature..... 4.0

Method of Cooling
Type of cooling..... Flooded coil, storage type cooling
Make of coil used..... Westinghouse
Type of refrigerant control..... High side float
Make of refrigerant control.. Westinghouse

Control
Type..... Seven point selector temperature control
Make ..... Westinghouse

Compressor
Make of condensing unit...Westinghouse
Condensing Unit Model No..... ASA-12H
Sealed or open type..... Sealed
Capacity (B.t.u. per hour)..... 1138, group No. IV
Refrigerant used ..... SO_2

Insulation
Kind ..... Granulated cork
Thickness ..... 2 in.

Materials Used in Construction
Material on exterior..... Steel panels
Finish ..... Black Dulux

General Electric

General Electric Co.
Nela Park, Cleveland, Ohio.
Model No. BM-21

Overall Dimensions (In.)
Width 18 7/16
Depth 24½
Height 58
Capacity (g.p.h.) 3.0

Compressor
Compressor Model No. CM-303
Condensing Model No. ....
Capacity ....

Cabinet
Make ..... General Electric

Insulation
Kind ..... Ground cork
Thickness .....

Method of Cooling
Type ..... Flooded
Make of coil ..... General Electric
Refrigerant control..... General Electric float valve

Control
Type ..... Temperature
Make ..... General Electric
Model CR-1057

Compressor
Make of condensing unit..General Electric
Type of compressor ..... Open
Refrigerant used Freon-12

Special Features
Foot pedal control; heat interchanger; splash-proof bubbler basin; concealed spigot; vitreous china top.

New Undabar Cooler Has Recessed-Coil Feature

ST. LOUIS,—General Import Co., manufacturer of Undabar beverage coolers, has added a new model to its line of bottle cooling equipment.

Known as No. 450, the new cooler is 4½ ft. long, and has a capacity of 160 12-oz. bottles. The cooler is of the sliding top type, and has its coils recessed in the side walls. It is powered by a ¼-hp. condensing unit.

New Frigidaire Water-Cooler Advertising Campaign Emphasizes 'Health & Efficiency'

DAYTON — With an advertising campaign based on health and efficiency, Frigidaire introduced recently what it claims to be the lowest-priced water cooler ever made by a first line company, reports Roy E. Smithson, manager of the commercial division.

The new unit, which will use the "Meter-Miser" compressor, will be backed by a campaign in publications reaching business and professionl men, financiers, and industrialists, all of whom, officials expect, are potential customers for office water-cooling equipment, and for units in their residences.

The advertisements broke in April and will continue through the middle of the hot season.

Copy for the campaign will stress the theme that "Thirst is nature's alertness in signalling the need of the human body for liquid nourishment.

Sedentary habits and modern living have worked against nature's original provisions. Bodily inactivity has upset nature's plans and now she fails to signal and the result is that as never before men and women in sedentary occupations need water."

United States News, Fortune, Time, Business Week, News-Week, Literary Digest, Nation's Business, Textile World, National Safety News, Factory Management and Maintenance, Building and Building Management, and *American Business* will receive copy placed by Lord and Thomas, Chicago.

To Insure Satisfaction . . .

Install a Hardy MAYFLOWER Compressor

Sturdy
Reliable
Efficient

Individually built of Quality Materials

HARDY MANUFACTURING CO. Inc., 100 Davis Ave., Dayton, O.

DISTRIBUTE THE LINE THAT HAS *ALL* THE LATEST DEVELOPMENTS - - FIRST

AMMONIA • METHYL CHLORIDE • "FREON-12"

The constant cold of the mountain top

Lipman

AUTOMATIC REFRIGERATION

SIZES TO MEET EVERY NEED • WATER OR AIR COOLED

LIPMAN pioneered the field of self-contained, full automatic ammonia refrigerating machines. Ever since, LIPMAN distributors have been able to offer the latest developments, first.

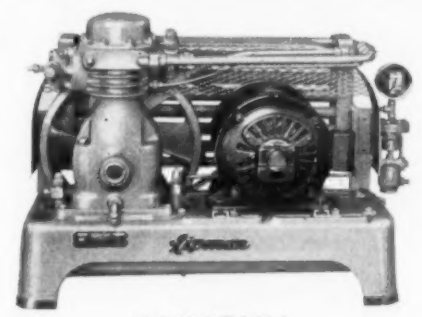
The most recent refinement in the LIPMAN line is a group of water cooled Ammonia machines ranging in size from 1 to 3 horsepower.

These new LIPMAN Ammonia machines* represent a remarkable advance in machine design. They provide all of the advantages of ammonia for certain modern applications yet are more compact, smaller in size and of higher operating efficiency than conventional types of methyl chloride machines of equal capacity.

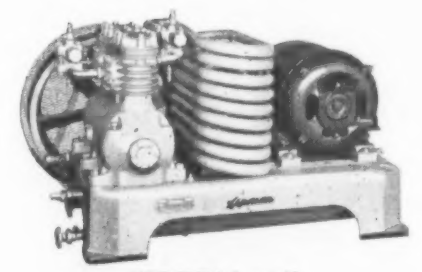
Now, LIPMAN distributors can supply modernly designed, efficient, compact and economical Ammonia machines for low temperature work wherever Ammonia equipment is preferred.

For complete information about these new Ammonia models, "Freon-12" models, Methyl Chloride models and other equipment in the complete LIPMAN line, write—

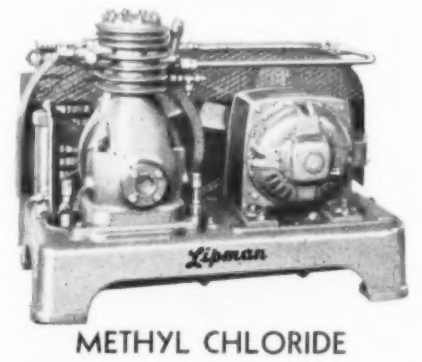
*



AMMONIA



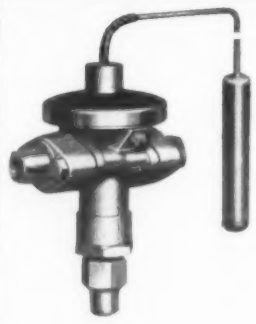
"FREON-12"



METHYL CHLORIDE

GENERAL REFRIGERATION SALES COMPANY

Dept. F-5, Beloit, Wisconsin, U.S.A.



Expansion Valves

with Forged Brass Bodies
with Diaphragm Type Construction
with 1 to 15 tons Freon Capacity

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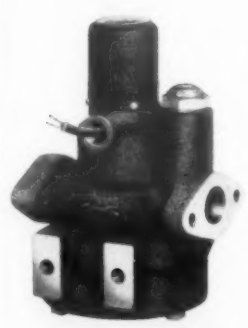

Refrigerant Valves

with Solenoid Type Construction
with Minimum Power Consumption
with 4 to 40 tons Freon Capacity

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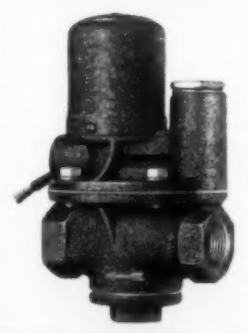

Water Valves

with Solenoid Type Construction
with Forged Brass Bodies
with ⅛" to ⅜" Diameter Orifices

Automatic Products Co.
121 N. Broadway, Milwaukee, Wis.

Baker

Baker Ice Machine Co., Inc.
Omaha, Neb.

Compressor—Bellows shaft seal. Air-cooled cylinder head. Splash and spray lubrication on models of 2 hp. and smaller, full pressure on larger. Oil level measured by bull's eye indicator on models of 3 hp. and larger.

Liquid Receiver—Horizontal. All models have fusible safety plug and refrigerant filter.

Condenser—Radiator type on air-cooled models, shell type on water cooled. Mounted under unit stand on water cooled.

Control—Penn and American Radiator pressure or temperature. All models ½ hp. and larger have high-pressure cutout. Thermal overload cutout in motor starter. Condensing water flow controlled by Automatic pressure water valve. Electrimatic water-regulating valve.

Materials Used—Cylinder block and pistons: semi-steel. Condenser shell and tubing: steel.

Valves—Multiple disc intake valves, multiple reed discharge valves.

Special Features—Timken tapered roller bearings. Trunk-type pistons. One-piece cylinder block.

	Refrigeration Capacity																
	40°		20°		5°		-10°										
Model No.	R.p.m.	B.t.u.	R.p.m.	B.t.u.	R.p.m.	B.t.u.	R.p.m.	B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
AM-33	...	...	...	1,995	...	...	...	...	⅓	2	1⅝ x 1 7/16	...	...	CH_3Cl	Air	Open	Reciprocating	Belt	.....	.....
AM-50	...	...	...	3,495	...	...	...	...	½	2	1⅝ x 2	...	...	CH_3Cl	Air	Open	Reciprocating	Belt	.....	.....
AM-75	...	...	...	4,920	...	...	...	...	¾	2	1⅝ x 2	...	...	CH_3Cl	Air	Open	Reciprocating	Belt	.....	.....
AM-100	...	...	...	6,500	...	...	...	...	1	2	2¼ x 2¼	...	...	CH_3Cl	Air	Open	Reciprocating	Belt	.....	.....
AM-150	...	...	...	9,400	...	...	...	...	1½	2	2¼ x 2¼	...	...	CH_3Cl	Air	Open	Reciprocating	Belt	.....	.....
M-33	...	...	...	2,720	...	...	...	...	⅓	2	1⅝ x 1 7/16	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
M-50	...	...	...	4,750	...	...	...	...	½	2	1⅝ x 2	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
M-75	...	...	...	6,400	...	...	...	...	¾	2	1⅝ x 2	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
M-100	...	...	...	8,600	...	...	...	...	1	2	2¼ x 2¼	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
M-150	...	...	...	12,900	...	...	...	...	1½	2	2¼ x 2¼	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
M-200	...	...	...	17,100	...	...	...	...	2	2	2⅞ x 2¼	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
M-300	...	...	...	25,800	...	...	...	...	3	2	3¾ x 3½	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
M-500	...	...	...	43,000	...	...	...	...	5	2	3¾ x 3½	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
M-750	...	...	...	64,300	...	...	...	...	7½	4	3¾ x 3½	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
M-1000	...	...	...	86,000	...	...	...	...	10	4	3¾ x 3½	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
M-1500	...	...	...	103,000	...	...	...	...	15	4	3¾ x 3½	...	...	CH_3Cl	Water	Open	Reciprocating	Belt	.....	.....
AF-33H	...	2,400	...	...	...	...	...	...	⅓	2	1⅝ x 1 7/16	...	...	Freon	Air	Open	Reciprocating	Belt	.....	.....
AF-50H	...	4,200	...	...	...	...	...	...	½	2	1⅝ x 2	...	...	Freon	Air	Open	Reciprocating	Belt	.....	.....
AF-75H	...	5,920	...	...	...	...	...	...	¾	2	1⅝ x 2	...	...	Freon	Air	Open	Reciprocating	Belt	.....	.....
AF- 100H	...	8,760	...	...	...	...	...	...	1	2	2¼ x 2¼	...	...	Freon	Air	Open	Reciprocating	Belt	.....	.....
AF-150H	...	13,320	...	...	...	...	...	...	1½	2	2¼ x 2¼	...	...	Freon	Air	Open	Reciprocating	Belt	.....	.....
F-33H	...	3,200	...	...	...	...	...	...	⅓	2	1⅝ x 1 7/16	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....
F-50H	...	4,920	...	...	...	...	...	...	½	2	1⅝ x 2	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....
F-75H	...	7,130	...	...	...	...	...	...	¾	2	1⅝ x 2	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....
F-100H	...	11,320	...	...	...	...	...	...	1	2	2¼ x 2¼	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....
F-150H	...	17,000	...	...	...	...	...	...	1½	2	2¼ x 2¼	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....
F-200H	...	22,600	...	...	...	...	...	...	2	2	2⅞ x 2¼	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....
F-300H	...	35,200	...	...	...	...	...	...	3	2	3¾ x 3½	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....
F-500H	...	58,500	...	...	...	...	...	...	5	2	3¾ x 3½	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....
F-750H	...	84,600	...	...	...	...	...	...	7½	4	3¾ x 3½	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....
F-1000H	...	112,500	...	...	...	...	...	...	10	4	3¾ x 3½	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....
F-1500H	...	153,600	...	...	...	...	...	...	15	4	3¾ x 3½	...	...	Freon	Water	Open	Reciprocating	Belt	.....	.....

Gibson

Gibson Electric Refrigeration Corp.,
Greenville, Mich.

Compressor—Bellows and lubricated ring type shaft seal. Cylinder head cooled by air on all air-cooled models; water on all water-cooled models. Splash-type lubricating system. Oil level measured by visible sight in crankcase wall on models of ¾ hp. or larger. Smaller models, rule inserted in crankcase. Compressor oil, Suniso No. 4; viscosity, 280-300 at 100° F.

Condenser—Air-cooled models: continuous fin tube. Water-cooled models: double-tube using counterflow principle. Condenser mounted on base behind motor.

Liquid Receiver—Horizontal type. All models equipped with fusible safety plug and liquid line strainer.

Controls—Cutler-Hammer on models 25 and 33, Penn on other models through 1 hp.; Detroit Lubricator on models larger than 1 hp. Automatic low-pressure type on air-cooled units, dual control and high-pressure cutout on water-cooled units. Heater coil overload cutout. Condensing water flow controlled by head pressure. Penn water regulating valve on all but models W-1000 and W-1500, which use Electrimatic valve.

Valves—Swedish steel disc intake valves, discharge valves are disc type with secondary oil relief springs of stainless steel.

Materials Used—Cast semi-steel cylinder block. Cast iron pistons. Soft drawn copper condenser tubing.

	Refrigeration Capacity																			
	40°		20°		5°		-10°													
Model No.	R.p.m.	B.t.u.	R.p.m.	B.t.u.	R.p.m.	B.t.u.	R.p.m.	B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
25	...	...	438	1,640	525	1,400	525	880	¼	2	1½ x 1¼	7.3 10.6	2 lbs. 3 lbs.	CH_3Cl F-12	Air	Open	Reciprocating	V-Belt	1½ pts.	25¾ x 17½ x 19½
33	265	3,275	333	2,750	387	2,125	387	1,325	⅓	2	1 13/16 x 1½	7.3 10.6	3½ lbs. 5½ lbs.	CH_3Cl F-12	Air	Open	Reciprocating	V-Belt	1¾ pts.	25¾ x 17½ x 21⅜
W-33	310	4,725	365	3,575	407	2,960	407	2,075	⅓	2	1 13/16 x 1½	7.3 10.6	3½ lbs. 5½ lbs.	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	1¾ pts.	25¾ x 17½ x 21⅜
50	265	4,575	335	3,900	430	3,300	430	2,300	½	2	2¼ x 1½	8.37 12.1	4 lbs. 6 lbs.	CH_3Cl F-12	Air	Open	Reciprocating	V-Belt	2 pts.	32 x 19⅛ x 22¼
W-50	330	7,000	385	5,350	460	4,175	460	3,000	½	2	2¼ x 1½	8.37 12.1	4½ lbs. 7 lbs.	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	2 pts.	32 x 19⅛ x 22¼
75	280	6,500	348	5,650	420	4,400	420	3,150	¾	2	2¼ x 2	8.37 12.1	4½ lbs. 7 lbs.	CH_3Cl F-12	Air	Open	Reciprocating	V-Belt	3 pts.	32 x 19⅛ x 24⅝
W-75	350	10,350	415	8,150	515	7,025	515	4,600	¾	2	2¼ x 2	8.37 12.1	5 lbs. 7½ lbs.	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	3 pts.	32 x 19⅛ x 24⅝
100	240	9,600	300	7,800	365	7,000	365	4,900	1	2	2¼ x 3	15.1 22	8 lbs. 12 lbs.	CH_3Cl F-12	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 24¾ x 29¼
W-100	300	14,400	370	10,850	420	9,000	420	6,400	1	2	2¼ x 3	15.1 22	8 lbs. 12 lbs.	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 24¾ x 29¼
150	290	15,200	365	12,600	425	10,600	425	6,650	1½	2	2½ x 3	15.1 22	8 lbs. 12 lbs.	CH_3Cl F-12	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30¾
W-150	365	21,500	420	15,950	475	13,500	475	9,750	1½	2	2½ x 3	15.1 22	8 lbs. 12 lbs.	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30
200	380	18,600	475	15,000	535	12,600	535	8,900	2	2	2½ x 3	15.1 22	8 lbs. 12 lbs.	CH_3Cl F-12	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30¾
W-200	475	28,125	540	22,275	640	17,050	640	11,900	2	2	2½ x 3	15.1 22	8 lbs. 12 lbs.	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30
W-300	455	35,950	550	30,750	640	25,750	640	18,750	3	3	2½ x 3	27.8 40	12 lbs. 14 lbs.	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	7½ pts.	52½ x 24¾ x 32½
W-500	460	64,000	550	50,150	618	41,300	618	29,650	5	3	3¼ x 3	27.8 40	5 lbs.* 5 lbs.*	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	7½ pts.	52½ x 24¾ x 33
W-750	365	101,250	440	84,750	505	73,500	505	52,500	7½	3	4 x 4¼	47 68	8 lbs.* 8 lbs.*	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	12 pts.	58¾ x 32⅝ x 39½
W-1000	440	129,750	510	102,500	570	79,750	570	57,900	10	3	4 x 4¼	47 68	8 lbs.* 8 lbs.*	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	12 pts.	58¾ x 32⅝ x 39½
W-1500	570	169,500	570	110,500	...	...	...	...	15	3	4 x 4¼	47 68	8 lbs.* 8 lbs.*	CH_3Cl F-12	Water	Open	Reciprocating	V-Belt	12 pts.	58¾ x 32⅝ x 41¼

†Speeds and capacities listed are for methyl chloride charged units only. *Holding charge.

Thermal Units

Thermal Units Mfg. Co.
Chicago, Ill.

Compressor—Rotary shaft seal. Cylinder head cooled by air. Pressure type lubricating system. Oil level measured by sight glass. Suniso or Capella mineral oil, viscosity 150.

Condenser—"W" models, double pipe, wound around base. "A" models, finned tubing, mounted on front of units.

Liquid Receiver—Horizontal type. All models have fusible safety plug and refrigerant filter.

Controls—Minneapolis-Honeywell or Penn pressure or temperature control. All models have high pressure cutout. Penn overload cutout. Condensing water flow controlled by Automatic water valve. Penn or Electrimatic water regulating valve.

Valves—Port intake and discharge valves.

Materials Used—Nickel chrome cylinder block, hardened ground steel pistons. Copper condenser tubing. Copper condenser shell.

	Refrigeration Capacity																		
	40°		20°		5°		-10°												
Model No.	R.p.m.	B.t.u.	R.p.m.	B.t.u.	R.p.m.	B.t.u.	R.p.m.	B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind*	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
58-W	1,750	5,965	1,750	3,870	1,750	2,825	1,750	1,875	½	8	9/16 x ⅞	10	5 lbs.	Freon	Water	Open	Reciprocating	Direct	1½ pts.	21 x 12 x 18
78-W	900	8,950	900	5,700	900	3,975	900	2,950	¾	8	13/16 x 1 1/10	18	8 lbs.	Freon	Water	Open	Reciprocating	Belt	2 pts.	25 x 15 x 20
108-W	1,200	11,930	1,200	7,740	1,200	5,625	1,200	3,750	1	8	13/16 x 1 1/10	20	10 lbs.	Freon	Water	Open	Reciprocating	Belt	2½ pts.	29 x 15 x 24
158-W	1,750	17,900	1,750	11,400	1,750	7,950	1,750	5,900	1½	8	13/16 x 1 1/10	25	12 lbs.	Freon	Water	Open	Reciprocating	Direct	3 pts.	31 x 15 x 24
58-A	1,750	5,547	1,750	3,600	1,750	2,627	1,750	1,744	½	8	9/16 x ⅞	10	5 lbs.	Freon	Air	Open	Reciprocating	Direct	1½ pts.	26 x 18 x 23
78-A	900	8,324	900	5,302	900	3,697	900	2,745	¾	8	13/16 x 1 1/10	18	8 lbs.	Freon	Air	Open	Reciprocating	Belt	2 pts.	31 x 19 x 27
108-A	1,200	11,095	1,200	7,198	1,200	5,232	1,200	3,488	1	8	13/16 x 1 1/10	20	10 lbs.	Freon	Air	Open	Reciprocating	Belt	2½ pts.	33 x 19 x 29
158-A	1,750	16,647	1,750	10,602	1,750	7,394	1,750	5,488	1½	8	13/16 x 1 1/10	25	12 lbs.	Freon	Air	Open	Reciprocating	Direct	3 pts.	35 x 19 x 30

*Methyl chloride also available.

York

York Ice Machine Corp., York, Pa.

Model No.	Motor Hp.	No. of Cylinders	Bore & Stroke Inches	Refrigerant Kind	Condenser Cooling Medium
412-FA	⅛	2	1¾ x 1⅞	Freon	Air
414-FA	⅓	2	1¾ x 1⅞	Freon	Air
416-FA	½	2	1¾ x 1¾	Freon	Air
417-FA	½	2	1¾ x 1¾	Freon	Air
418-FA	¾	2	1¾ x 1¾	Freon	Air
419-FA	¾	2	1¾ x 1¾	Freon	Air
422-FA	1	2	2⅝ x 1¼	Freon	Air
423-FA	1	2	2⅝ x 1¼	Freon	Air
424-FA	1½	2	2⅝ x 2½	Freon	Air
425-FA	1½	2	2⅝ x 2½	Freon	Air
426-FA	2	2	2⅝ x 2½	Freon	Air
427-FA	2	2	2⅝ x 2½	Freon	Air
422-FW	¾	2	2⅝ x 1¼	Freon	Water
423-FW	¾	2	2⅝ x 1¼	Freon	Water
424-FW	1	2	2⅝ x 1¼	Freon	Water
425-FW	1	2	2⅝ x 1¼	Freon	Water
426-FW	1½	2	2⅝ x 2½	Freon	Water
427-FW	1½	2	2⅝ x 2½	Freon	Water
428-FW	2	2	2⅝ x 2½	Freon	Water
429-FW	2	2	2⅝ x 2½	Freon	Water
42T8-FW	3	3	2⅝ x 2½	Freon	Water
42T9-FW	3	3	2⅝ x 2½	Freon	Water
444-FW	5	2	4 x 4	Freon	Water
446-FW	7½	2	4 x 4	Freon	Water
44T6-FW	10	3	4 x 4	Freon	Water
446-FWD	15	2–2	4 x 4	Freon	Water
44T8-FWD	20	2–3	4 x 4	Freon	Water
44T8-FWD	25	2–3	4 x 4	Freon	Water

BOTTLE BEVERAGE COOLERS

Kelvinator

Kelvinator Corp., Detroit, Mich.

Model No.	BC-150	BC-90	BCW-90	VT-96	VT-64
Overall Dimensions (In.)					
Width	44⅛	33⅛	33⅛	44⅛	33⅛
Depth	25⅛	25⅛	25⅛	25⅛	25⅛
Height	36¼	36¼	38	36¼	36¼
Capacity of unit, bottles	150	90	90	96	64
Condensing Unit					
Model No.	...	...	...	...	...
Compressor Model No.	B-9325	B-9316	B-9325	B-9325	B-9316
Capacity (B.t.u./hr.)	...	...	...	...	...
Thickness of Insulation (In.)					
Top	½	½	½	½	½
Sides	2	2	2	2	2
Bottom	2½	2½	2½	2½	2½

* * *

Cabinet
Make of cabinet ..... Kelvinator

Method of Cooling
Type of cooling ..... Wet immersion
Make of coil ..... Kelvinator
Refrigerant control ..... High side float
Make of refrigerant control ..... Kelvinator

Insulation
Kind ..... Celotex

Compressor
Make of condensing unit ..... Kelvinator
Sealed or open type ..... Open
Refrigerant used ..... Methyl Chloride

Control
Type ..... Temperature
Make ..... Ranco

Materials Used in Construction
Exterior and finish ..... Sheet metal; two-coat baked enamel
Finish of interior and parts ... Tub hot dip galvanized inside and outside

Special Features
BC-150 and VT-96 models equipped with sliding-type doors mounted on rollers. BCW-90 model equipped with drinking-water cooling coil.

Norge

Norge Corp., Detroit, Mich

Model No.	B 20-6	B 25-6	BW 25-6	XBW 25-6
Overall Dimensions (In.)				
Width	44½	44½	44½	44½
Depth	25½	25½	25½	25½
Height	35¾	35¾	35¾	35¾
Capacity of unit (12-oz. bottles)	119	119	100	100
Condensing Unit				
Model No.	...	...	...	...
Compressor Model No.	...	...	...	...
Capacity (B.t.u./hr.)	...	...	...	...
Thickness of Insulation (in.)				
Top	...	...	...	...
Sides	...	...	...	...
Bottom	...	...	...	...

* * *

Cabinet
Make of cabinet .....

Method of Cooling
Type of cooling ..... Wet immersion
Make of coil .....
Refrigerant control ..... Automatic
Make of refrigerant control .....

Control
Type ..... 11-Point temperature
Make .....
Model No. .....

Compressor
Make of condensing unit ... Norge Rollator
Type of compressor ..... Open
Refrigerant ..... Sulphur dioxide

Insulation
Kind ..... Norge Approved

Materials Used
Exterior & finish ... Baked enamel on steel
Interior and parts ..... Galvanized heavy gauge steel

Super-Cold

Super-Cold Corp., Los Angeles, Calif.

Model No.	5-LT	5-ST
Overall Dimensions (In.)		
Width	44	44
Depth	26	26
Height	36½	36½
Capacity of unit, pints	120	120
Condensing Unit		
Model No.	D-14	D-14
Compressor Model No.	A	A
Capacity (B.t.u./hr.) at 28° evap.	1600	1600
Thickness of Insulation (In.)		
Top	1½	1½
Sides	2	2
Bottom	2	2

Cabinet
Make of cabinet ..... Super-Cold

Method of Cooling
Type of cooling ..... Wet immersion
Make of coil ..... Super-Cold
Refrigerant control ..... Temperature (automatic valve)
Make of refrigerant control ..... Detroit Lubricator

Control
Type ..... Temperature
Make ..... Penn

Compressor
Make of condensing unit ..... Super-Cold
Type of compressor ..... Open
Refrigerant ..... Methyl chloride

Insulation
Kind ..... Supertex

Materials Used
Exterior & finish ..... Metal finished in green Dulux
Interior & parts ..... Galvaneal metal not finished

Frigidaire

Frigidaire Corp., Dayton, Ohio.

Model No. BB-150
Make of cabinet .....

Overall Dimensions (In.)
Width 26½
Depth 44⅜
Height 39¼
Capacity of unit (6-oz. bottles) 150

Method of Cooling
Type of cooling ..... Tubing immersed in water bath
Make of coil used ..... Frigidaire
Type of refrigerant control ..... High side float
Make of refrigerant control ... Frigidaire

Control
Type ..... Thermostat
Make ..... Frigidaire

Compressor
Make of condensing unit ..... Frigidaire
Condensing Model No. H-256B
Sealed or open type ..... Open
Refrigerant used ..... SO_2

Insulation
Kind .....
Thickness in sides ..... 2 in.
Thickness in bottom ..... 2½ in.

Materials Used in Construction
Material on exterior and finish .... Duco on steel

Special Features
Cold control.

General Electric

General Electric Co.
Nela Park, Cleveland, Ohio.

Model No. TM-3

Overall Dimensions (In.)
Make of cabinet ..... General Electric
Width 44½
Depth 29½
Height 37¼
Capacity of unit (6-oz. bottles) 150

Method of Cooling
Type of cooling ..... Flooded
Make of coil used ..... General Electric
Type of refrigerant control .... Float valve
Make of refrigerant control ..... General Electric

Control
Type ..... Temperature
Make ..... General Electric
Model No. ..... CR 1057

Compressor
Make of condensing unit .. General Electric
Condensing Model No. CM-331
Compressor Model No. ....
Capacity (B.t.u./hr.) ....
Sealed or open type ..... Open
Refrigerant used ..... SO_2

Insulation
Kind ..... Insulite, Asphalt dipped
Thickness in top and sides ..... 2 in.
Thickness in bottom ..... 2½ in.

Materials Used in Construction
All steel cabinet, lacquer finish. Hardware, chrome-plated brass.

Special Features
Tinned brass expansion header, water cooling coil available. Dry compartment available, float heat interchanger, storage space under cooling compartment.

Westinghouse

Westinghouse Electric & Mfg. Co.
Mansfield, Ohio.

Model No. WB-5
Make of cabinet .... (S. & S.) Products Co.

Overall Dimensions (In.)
Width 40
Depth 22½
Height 37
Capacity of unit ..... 120 6-oz. bottles

Method of Cooling
Type of cooling . Submerged copper tubing
Make of coil used ..... Westinghouse
Type of refrigerant control ..... High side float
Make of refrigerant control .. Westinghouse

Control
Type ..... Temperature control
Make ..... Cutler-Hammer

Compressor
Make of condensing unit ... Westinghouse
Condensing Unit Model No. ASA-12H
Sealed or open type ..... Sealed
Capacity (B.t.u. per hour) ..... 692, Group No. III
Refrigerant used ..... SO_2

Insulation
Kind ..... Glass Wool
Thickness in top ..... One inch
Thickness in sides ..... Two inches
Thickness in bottom ..... Three inches

Materials Used in Construction
Material on exterior finish ..... Orange Enamel on Heavy Steel
Finish of interior and parts .... Galvanized steel

Gibson

Gibson Electric Refrigerator Corp.
Greenville, Mich.

Model No. BC-72

Overall Dimensions (In.)
Width 35
Depth 25
Height 34
Capacity (12-oz. bottles) 72

Method of Cooling
Type of cooling ... Finned coil—forced air circulation
Make of coil used ..... McCord
Type of refrigerant control ... Expansion valve
Make of refrigerant control ..... Mayson

Cabinet
Make of cabinet ..... Gibson

Control
Type ..... Temperature
Make ..... Ranco
Model No. ..... Special

Compressor
Make of condensing unit .. Universal Cooler
Condensing Model No. ..... CA
Compressor Model No. ..... CA
Sealed or open type ..... Open
Capacity (B.t.u./hr.) ... 953 (20° evaporator 90° room) group No. 3
Refrigerant used ..... Methyl chloride

Insulation
Kind ..... Balsam Wool
Thickness in top ..... 1½ in.
Thickness in sides ..... 3 in.
Thickness in bottom ..... 3 in.

Materials Used in Construction
Material on exterior finish ... Lacquer on steel on sides—Monel on top
Finish of interior and parts ... Galvanized

Special Features
Dry cooling.

Super-Cold Distributor Installs 3 Carloads

OKLAHOMA CITY — Although a comparatively new distributor for the Super-Cold line, Belsky Fixture Co. here has installed approximately three carloads of Super-Colds in this territory, officials of the manufacturing company report.

SILVER PISTON RINGS SEAL

FOR ECONOMY

SPECIFY

SILVER SEAL PISTON RINGS

THE ONLY PISTON RING DESIGNED & DEVELOPED Exclusively for Refrigeration

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Branches: St. Louis, Mo. and New York City.

Wholesale Radio Service Co., Inc.
100 Sixth Avenue,
New York City.
Branches: Atlanta, Ga., Newark, N. J., 542 E. Fordham Rd., Bronx, N. Y. and Chicago.

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Kansas City, Mo.

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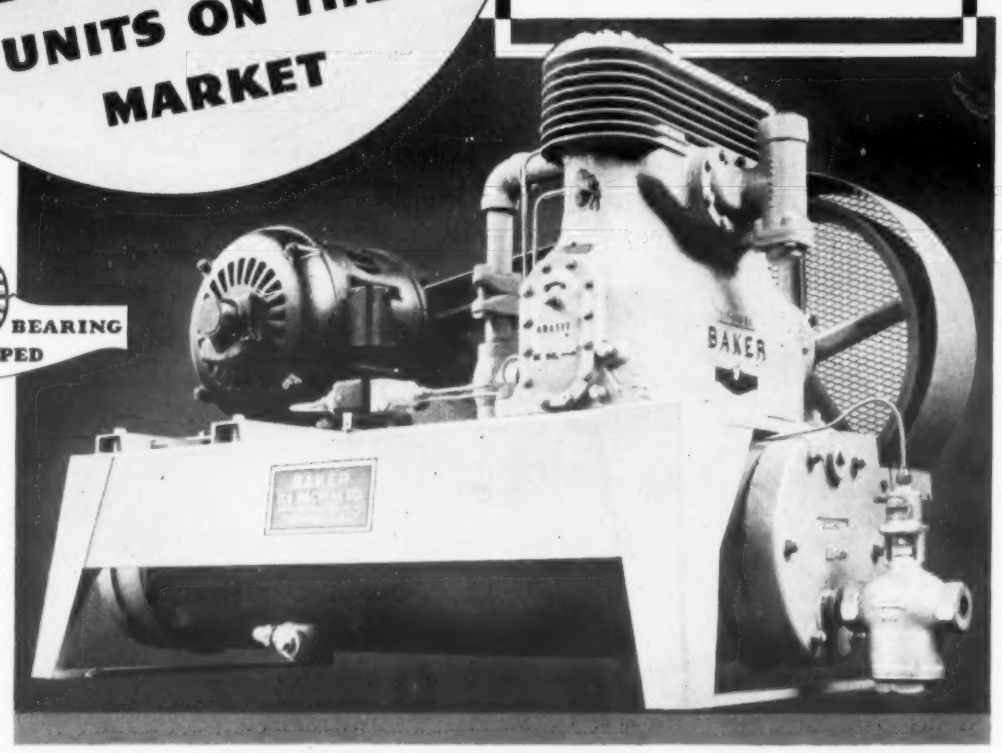
BAKER PRESENTS THE *most complete line* OF SMALL AND MEDIUM CAPACITY UNITS ON THE MARKET

77 MODELS

FOR FREON OR METHYL-CHLORIDE

FROM ¼ to 30 H.P.



TIMKEN BEARING EQUIPPED

GENERAL LINE SPECIFICATIONS

One-piece, semi-steel casting of cylinders and crankcase assuring accurate alignment for life of unit.

Precision honed cylinders.

Drop forged steel crankshaft with extra large bearing surfaces, precision machined and accurately balanced.

Timken tapered roller bearings on thrust and blind ends of crankshaft.

Full force feed lubrication on all large size units. Small units use splash and spray type oiling system.

Drop-forged steel connecting rods with babbitt bearings and large area wrist pin bushings.

Double trunk type pistons fitted with high quality compression and oil wiping rings.

Shell & Tube type extra capacity condensers with removable head for easy cleaning when clogged with sediment and scale from mineral deposits in water.

Quiet, high capacity, positive seating discharge and suction valves.

Write for detailed specifications on any unit.

for all refrigerating and air conditioning applications

Look through the Baker line of small and medium capacity units to fill your specifications for high capacity cooling service. It's complete from sturdy midget size two cylinder type ¼ H.P. to compact four cylinder 30 H.P. dual unit—for every variation in refrigerating requirements a Baker unit designed to exactly fit the application. In addition to being the most complete line, it also offers mechanical refinements found in no other unit—features of precision manufacture that result in an enviable record for efficiency, dependability, and low operating cost. Write for interesting new folder fully describing the Baker line—sent promptly on request.

BAKER

ICE MACHINE CO., INC.

Factories: Los Angeles, Seattle, Ft. Worth, Omaha. Central Sales: Chicago. Eastern Sales: New York. Other sales and service offices in principal cities.

MEMBER ACMA RELIABILITY EXPERIENCE COOPERATION MANUFACTURERS ASSOCIATION

This emblem identifies the manufacturer who is best prepared to give you prompt, reliable factory cooperation on all air conditioning jobs.

Diceler

Deissler Machine Co., Greenville, Pa.

Compressor—Balanced bellows shaft seal. Cylinder head cooled by air in air-cooled models, water in water-cooled models. Splash or centri-force lubricating system. Oil level measured by sight gauge in 6000 series, in all other models by oil level plug. Type of compressor oil: mineral.

Liquid Receiver—Horizontal type. Models 4500-MA and larger have fusible safety plug. All models have refrigerant filter.

Condenser—Air-cooled models: fin tube. Water-cooled models: double tube.

Materials Used—Cylinder block and pistons: nickel iron. Condenser tubing: copper.

Controls—Penn or Cutler-Hammer pressure control. All water-cooled models, and all air-cooled models in 4000 series and lanrger have high pressure cutout. Condensing water flow controlled by condensing pressure. Deissler water regulating valve.

Valves—Disc-type (spring loaded) intake valves and disc-type discharge valves.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
400-MA	325	1,958	325	1,360	425	986	510	608	⅛	1	1⅝ x 1⅛	3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1 pt.	17½ x 14¾ x 12
800-MA	375	2,385	375	1,496	475	1,110	590	725	¼	1	1⅝ x 1⅝	3	2½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1 pt.	17½ x 15½ x 12
1600-MA	290	2,960	290	2,140	340	1,750	385	1,520	¼	2	1⅝ x 1⅝	5	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	21 x 18 x 18¼
2600-MA	325	3,285	325	2,310	385	1,875	480	1,655	⅓	2	1⅝ x 1⅝	8	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2½ pts.	21 x 19 x 20
2600-MW	375	4,120	375	2,820	425	2,220	525	1,710	⅓	2	1⅝ x 1⅝	8	3½ lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2½ pts.	22½ x 20 x 20
2800-MA	425	5,745	425	3,990	525	3,325	590	2,600	½	2	1¾ x 1⅝	8	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3 pts.	25 x 18 x 18½
2800-MW	475	6,486	475	4,325	575	3,620	625	2,805	½	2	1¾ x 1⅝	8	4 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3 pts.	27½ x 20 x 17
3800-MA	325	7,975	325	5,565	385	4,620	480	3,775	¾	4	1⅝ x 1⅝	12	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4½ lbs.	28½ x 20½ x 22
3800-MW	375	9,630	375	6,840	425	5,625	525	4,310	¾	4	1⅝ x 1⅝	12	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4½ lbs.	31 x 24 x 19
3900-MA	425	12,290	425	8,800	525	6,630	590	5,445	1	4	1¾ x 1⅝	12	5½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5 lbs.	30 x 21½ x 25
3900-MW	475	1,535	475	9,995	575	8,120	625	6,400	1	4	1¾ x 1⅝	12	5½ lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5 lbs.	31 x 25 x 21
4000-MA	325	16,980	325	12,710	385	9,875	480	8,215	1½	4	2 x 2⅛	16	5½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	5½ lbs.	30½ x 22 x 25
4000-MW	375	23,250	375	16,380	425	12,900	525	9,925	1½	4	2 x 2⅛	16	5½ lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	5½ lbs.	31½ x 25½ x 22
4500-MA	425	19,360	425	15,755	525	12,725	590	10,475	2	4	2 x 2⅛	26	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	8 lbs.	35½ x 25½ x 26
4500-MW	475	28,745	475	19,625	575	15,220	625	11,960	2	4	2 x 2⅛	26	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	8 lbs.	37½ x 27½ x 22½
5000-MA	300	34,745	300	24,355	385	19,526	485	14,890	3	4	2 x 3⅝	26	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	10 lbs.	37½ x 27½ x 28
5000-MW	325	40,160	325	27,385	425	21,900	525	17,850	3	4	2 x 3⅝	26	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	10 lbs.	37½ x 27½ x 24
6000-MW	485	61,344	485	39,528	590	28,032	650	19,225	5	4	2 x 3⅝	70	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	59 x 33 x 33½
6400-MW	325	107,136	325	68,256	485	46,080	590	25,344	7½	4	3 1/16 x 3¼	90	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	59 x 33 x 36½
6800-MW	485	122,544	485	85,536	590	56,448	650	33,552	10	4	3 1/16 x 3¼	90	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	59 x 33 x 36½
7000-MW	590	172,865	590	119,286	650	83,880	725	48,873	15	4	3 1/16 x 3¼	90	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	59 x 38 x 36½

Carbondale

Carbondale Machine Corp.
Harrison, N. J.

Compressor—Sylphon shaft seal. Cylinder head cooled by suction gas. Splash-type lubricating system. Oil level measured by oil-level gauge. Socony Vacuum 425 oil used in compressor, viscosity 255 at 100° F.

Condenser—Shell and coil type, located under base.

Liquid Receiver—In condenser. All models have fusible safety plug, refrigerant filter optional.

Materials Used—Cylinder block and pistons, cast iron. Condenser tubing, copper. Condenser shell, drawn seamless steel.

Controls—Square D automatic dual pressure control with high pressure cutout. Solder pot thermal overload cutout. Condensing water flow regulated by Penn automatic water valve.

Valves—Silent feather intake and discharge valves.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
CB-300W	275	34,600	325	23,760	325	15,900	325	10,700	3	4	3¼ x 2¼	75	5 lbs.	Freon	Water	Open	Reciprocating	V-Belt	8 pts.	48 x 23½ x 29
CB-500W	460	57,550	525	39,560	525	26,500	525	17,800	5	4	3¼ x 2¼	75	5 lbs.	Freon	Water	Open	Reciprocating	V-Belt	8 pts.	48 x 23½ x 29
CB-750W	275	78,500	350	54,000	350	36,200	350	24,300	7½	4	4¼ x 3	95	6 lbs.	Freon	Water	Open	Reciprocating	V-Belt	18 pts	72 x 35 x 38
CB-1000W	360	107,850	450	73,970	450	49,500	450	33,300	10	4	4¼ x 3	140	8 lbs.	Freon	Water	Open	Reciprocating	V-Belt	18 pts	72 x 35 x 38
CB-1500W	550	157,100	550	107,890	550	72,160	550	48,550	15	4	4¼ x 3	190	10 lbs.	Freon	Water	Open	Reciprocating	V-Belt	18 pts	72 x 35 x 38
CB-2500W	450	257,100	550	176,800	550	118,200	550	79,500	25	4	4¼ x 3	250	12 lbs.	Freon	Water	Open	Reciprocating	V-Belt	36 pts.	90 x38 x 38

Zerozone

Zerozone Refrigeration Co.
Detroit, Mich.

Compressor—Bellows shaft seal. Air-cooled cylinder head on air-cooled models, water-cooled on water models. Splash lubrication. Oil level measured by oil check plug. Suniso compressor oil, viscosity 200.

Condenser—Air cooled, finned tube; water cooled, counter flow and shell and tube.

Liquid receiver—Water cooled models have fusible safety plug. All models have liquid filter.

Materials Used—Cylinder block and pistons: semi-steel. Condenser tubing: copper. Condenser shell: steel

Control—Penn pressure and thermostatic control. Models of ½ hp. and larger have high pressure cut-out. Thermal soft-solder type overload cut-out. Condensing water flow controlled by condensing pressure. Riley water-regulating valve.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
A-125	575	2,073	650	1,500	650	1,080	725	730	¼	2	1¼ x 1⅛	2.6	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	⅞ pts.	.....
A-233	440	3,940	515	2,960	515	2,070	570	1,710	⅓	2	1½ x 1½	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	.....
W-233	480	4,590	515	3,700	515	2,530	570	1,780	⅓	2	1½ x 1½	18	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	.....
A-350	390	5,650	440	4,400	440	3,300	515	2,400	½	2	2 x 1½	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	.....
W-350	440	6,540	480	4,540	480	3,380	515	2,340	½	2	2 x 1½	18	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	.....
A-375	575	7,700	640	5,700	640	3,840	640	2,610	¾	2	2 x 1½	20	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	.....
W-375	575	7,770	640	6,550	640	4,590	640	3,370	¾	2	2 x 1½	18	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2 pts.	.....
A-475	...	...	285	5,600	285	4,200	340	2,850	¾	2	2¼ x 2½	16½	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	.....
W-475	...	...	300	6,000	300	4,210	375	3,370	¾	2	2¼ x 2½	16½	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	.....
A-4100	300	9,600	380	7,250	380	5,200	430	4,100	1	2	2¼ x 2½	16½	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	.....
W-4100	340	10,800	390	7,860	390	5,800	470	4,450	1	2	2¼ x 2½	16½	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	.....
A-5150	...	...	280	10,900	280	7,800	325	6,250	1½	2	2¾ x 3¼	21½	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	8 pts.	.....
W-5150	...	...	310	11,700	310	8,520	375	6,750	1½	2	2¾ x 3¼	21½	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	.....
A-5200	335	17,800	390	14,900	390	10,400	440	7,600	2	2	2¾ x 3¼	21½	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	8 pts.	.....
W-5200	350	19,750	425	16,400	425	11,350	480	8,050	2	2	2¼ x 3¼	21½	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	.....
W-475-IC	...	...	...	...	375	4,700	375	3,260	¾	2	2¼ x 2½	16	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	.....
W-4100-IC	...	...	...	...	470	6,050	470	4,120	1	2	2¼ x 2½	16	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	.....
W-4150-IC	...	...	...	...	615	9,050	615	5,950	1½	2	2¼ x 2½	16	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	.....
W-5150-IC	...	...	...	...	375	9,850	375	6,370	1½	2	2¾ x 3¼	16	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	.....
W-5200-IC	...	...	...	...	470	12,200	470	7,860	2	2	2¾ x 3¼	16	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	.....
ZC-25	575	2,073	650	1,500	650	1,080	725	730	¼	2	1¼ x 1⅛	11	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	⅞ pts.	.....
ZC-33	440	3,940	515	2,960	515	2,070	570	1,710	⅓	2	1½ x 1½	11	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	.....
ZC-50	390	5,650	440	4,400	440	3,300	515	2,400	½	2	2 x 1½	11	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	.....

Reliable

Reliable Refrigeration Co., Inc.
2509 So. Pulaski Road, Chicago, Ill.

Compressor—Bellows shaft seal. Water or air-cooled cylinder head. Splash lubrication.

Condenser—Finned tube on air-cooled models, double pipe on water-cooled models. Located over receiver.

Liquid Receiver—Horizontal type. All models have refrigerant filter.

Materials Used—Condenser tubing: copper.

Control—Penn Type L on air-cooled models, Penn Type LS on water-cooled. All water-cooled models have high pressure cut-out. Penn water-regulating valve.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
35-A	...	...	...	...	425	1,572	...	...	⅓	2	1⅝ x 2	6	3 lbs.	CH_3Cl	Air	Open	Reciproca'ing	Belt	...	.....
50-A	...	...	...	...	500	2,105	...	...	½	2	1⅝ x 2	6	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	...	.....
50-W	...	...	...	...	500	2,820	...	...	½	2	1⅝ x 2	6	4 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	.....
75-A	...	...	...	...	405	3,374	...	...	¾	2	2¼ x 2⅛	12	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	...	.....
75-W	...	...	...	...	405	4,660	...	...	¾	2	2¼ x 2⅛	12	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	.....
100-W	...	...	...	...	380	6,375	...	...	1	2	2¼ x 3	12	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	.....
150-W	...	...	...	...	480	7,945	...	...	1½	2	2¼ x 3	12	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	.....
200-W	...	...	...	...	330	13,560	...	...	2	2	3¼ x 3½	20	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	.....
300-W	...	...	...	...	510	21,000	...	...	3	2	3¼ x 3½	20	10 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	.....
500-W	...	...	...	...	445	29,400	...	...	5	2	3⅞ x 3⅞	30	15 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	...	.....

Reliance

Reliance Refrigerating Machine Co., Inc., Chicago, Ill.

Model No.	Refrigeration Capacity* 25° R.p.m.	25° B.t.u.	20° R.p.m.	20° B.t.u.	10° R.p.m.	10° B.t.u.	0° R.p.m.	0° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump† Down Capac.	Refrigerant Quantity	Refrigerant Kind‡	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
A-33	500	2,850	500	2,585	500	2,085	500	1,670	⅓	2	1½ x 1 7/16	2 — 3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	....	24 x 16 x 14
A-50	750	4,450	750	4,050	750	3,270	750	2,620	½	2	1½ x 1 7/16	2 — 3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	....	24 x 19 x 14
B-50	625	4,450	625	4,050	625	3,270	625	2,620	½	2	1⅝ x 1⅝	6½— 9	3 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	....	26 x 15 x 20½
WB-50	655	4,950	655	4,500	655	3,620	655	2,900	½	2	1⅝ x 1⅝	6½— 9	3 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	....	32 x 16 x 22
F-75	460	7,880	460	7,150	460	5,760	460	4,620	¾	2	2⅛ x 2	11 —15½	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	....	30½ x 17½ x 26
WF-75	480	8,530	480	7,750	480	6,250	480	5,000	¾	2	2⅛ x 2	13½—19	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	....	32 x 17 x 15
F-100	585	10,300	585	9,350	585	7,550	585	6,050	1	2	2⅛ x 2	11 —15½	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	....	30½ x 17½ x 26
WF-100	585	10,800	585	9,800	585	7,900	585	6,320	1	2	2⅛ x 2	13½—19	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	....	32 x 17 x 27
G-150	525	14,250	525	12,950	525	10,420	525	8,360	1½	2	2¼ x 2 13/16	27 —39	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	....	38 x 22 x 30
WG-150	525	15,600	525	14,150	525	11,400	525	9,150	1½	2	2¼ x 2 13/16	40 —56	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	....	45 x 19 x 30
G-200	690	18,800	690	17,100	690	13,800	690	11,050	2	2	2¼ x 2 13/16	27 —39	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	....	45 x 19 x 30
WG-200	690	20,800	690	18,900	690	15,200	690	12,200	2	2	2¼ x 2 13/16	40 —56	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	....	45 x 19 x 30
WH-300	420	32,800	420	29,800	420	24,000	420	19,300	3	3	2⅞ x 2 13/16	40 —56	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	....	48 x 22 x 33
WH-500	685	59,200	685	53,800	685	40,600	685	30,300	5	3	2⅞ x 2 13/16	68 —97	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	....	58 x 28 x 42
WK-750	360	83,000	360	75,500	360	57,000	360	42,500	7½	2	5 x 5	94 —134	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	....	72 x 30 x 50

*Units rated at the following suction temperatures: 25° F., 20° F., 10° F., and 0° F. †First figure represents pump down capacity in pounds with methyl chloride; second figure with Freon.
‡Also available with Freon.

ICE CREAM CABINETS

Kelvinator

Kelvinator Corp., Detroit, Mich.

Model No.	Specialty Chests 2 Hole	Specialty Chests 3 Hole	Specialty Chests 4 Hole	Portable Ice Cream Cabinets 2 Hole	Portable Ice Cream Cabinets 3 Hole	Portable Ice Cream Cabinets 4 Hole	Portable Ice Cream Cabinets 6 Hole	Portable Ice Cream Cabinets 12 Hole
Overall Dimensions (In.)								
Width	29⅞	41⅛	30¾	49¾	60⅝	51½	62⅝	95¾
Depth	18¾	18¾	29⅞	20⅛	20⅛	30⅝	30⅝	31⅝
Height	36½	36½	36½	29⅝	29⅝	29⅝	29⅝	30⅝
Capacity, 2½-gal. cans	2	3	4	...	...	...	...	...
5-gal. cans	...	...	...	2	3	4	6	12
Condensing Unit								
Model No.	...	...	...	...	...	...	...	...
Compresor Model No.	B-9325	B-9325	B-9325	B-9333	B-9333	B-9333	B-9333	B9333
Capacity (B.t.u./hr.)	...	...	...	...	...	...	...	...
Thickness of Insulation (In.)								
Top (lids)	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛
Sides	3	3	3	3	3	3	3	3
Bottom	4	4	4	3	3	3	3	4

* * *

Cabinet
Make of cabinet ..... Kelvinator

Overall Dimensions (In.)

Method of Cooling
Type of cooling.....Direct expansion on holdover tanks
Make of coil used ..... Kelvinator
Type of refrigerant control.....High side float
Make of refrigerant control.....Kelvinator

Control
Type ..... Temperature
Make ..... Ranco

Compressor
Make of condensing unit.....Kelvinator
Sealed or open type ..... Open
Refrigerant used .....Methyl Chloride

Insulation
Kind ..... Corkboard

Materials Used in Construction
Exterior and finish.....Rust proofed sheet steel finished in white porcelain
Finish of interior and parts....galvanized copper molybdenum iron

Frigidaire

Frigidaire Corp., Dayton, Ohio.

Model No.	P-225	P-425	P-250	P-450	P-650
Overall Dimensions (In.)					
Width	18¾	30	23⅜	30	30
Length	30	31	49	50	62½
Height	38½	38½	32¾	32¾	32¾
Capacity, number of cans	2	4	2	4	6
Size of cans (gallons)	2½	2½	5	5	5
Condensing Unit					
Model No.	FH206P	FH256P	FH256P	FH256P	F1C P
Capacity (B.t.u./hr.)	...	...	...	...	...
Thickness of Insulation (In.)					
Top (in.)	2½	2½	2½	2½	2½
Sides (in.)	3	3	5⅜-3	3	3
Bottom (in.)	4	4	4	4	4

* * *

Cabinet
Make of cabinet ..... Frigidaire

Method of Cooling
Type of cooling.....Tubing soldered to the sleeve
Make of coil used.....Frigidaire
Type of refrigerant control.....High side float control (P-650, expansion valve)
Make of refrigerant control.....Frigidaire

Control
Type .....Thermostat switch
Make ..... Frigidaire

Compressor
Make of condensing unit.....Frigidaire
Sealed of open type .....Open
Refrigerant used F-12

Insulation
Kind .....

Materials Used in Construction
Exterior and finish.....Duco on steel

Special Features
Hinged lids, cold control, porcelain legs and bottom trim.

General Electric

General Electric Co.
Nela Park, Cleveland, Ohio.

Model No.	HC-2	HC-4
Make of cabinet	General Electric	
Overall Dimensions (In.)		
Width	48	48
Depth	20¼	30
Height	31 11/16	31 11/16
Capacity of unit	2 Hole	4 Hole

Compressor

Condensing Model No.	CM-39	CM-39
Compressor Model No.	...	...
Capacity (B.t.u./hr.)	...	...

Insulation

Thickness in top	4	3⅝
Thickness in sides	4	3⅝
Thickness in bottom	4	4

Method of Cooling
Type of cooling.....Direct expansion
Make of coil used.....General Electric
Type of refrigerant control..Thermostatic expansion valve
Make of refrigerant control.....Detroit Lubricator

Control
Type ..... Temperature
Make ..... General Electric
Model No. CR-1057

Compressor
Make of condensing unit..General Electric
Sealed or open type.....Open
Refrigerant used Freon-12

Insulation
Kind.....Top and sides, Thermocraft; bottom, Celotex

Materials Used in Construction
All steel cabinets, black porcelain sides, stainless satin-finished alloy top, hinged molded rubber lids.
Compartment of heavily tinned copper, copper refrigerant coil, angle iron frame enclosed in galvanized steel sheets.

Special Features
Heat interchanger, heavy wire partitions, bumper plates in bottom of compartment. Cabinet thoroughly sealed forming a moisture tight enclosure for the insulation.

Super-Cold

Super-Cold Corp., Los Angeles, Calif.

Model No.	342-FI	344-FI	346-FI	348-FI	350-FI
Overall Dimensions (In.)					
Length	44	56	68	80	91½
Depth	32	32	32	32	32
Height	31	31	31	31	31
Capacity of cabinet	20 to 60 gallons				
Condensing Unit					
Model No.	AD-25	AD-33	AE-33	AEH-33	AG-50
Compressor Model No.	A	A	E	E	G
Capacity (B.t.u./hr.)	800	900	1100	1250	1500
Thickness of Insulation (In.)					
Top	2	2	2	2	2
Sides	3	3	3	3	3
Bottom	3	3	3	3	3

* * *

Cabinet
Make of cabinet.....Super-Cold

Method of Cooling
Type of cooling.....Direct expansion exposed tubes
Make of coil .....Super-Cold
Refrigerant control.....Automatic
Make of refrigerant control.....Detroit Lubricator

Control
Type .....Temperature
Make .....Penn
Model No. .....

Compressor
Make of condensing unit.....Super-Cold
Type of compressor.....Open
Refrigerant .....Methyl chloride

Insulation
Kind .....Supertex

Materials Used
Exterior & finish....Steel finished in black enamel. Lids rubber, top of stainless steel
Interior & parts.....Galvanized metal

Special Features
Direct expansion open tube type with coils down the walls and ends and down through the center.

SERVICE REFRIGERATORS

Super-Cold

Super-Cold Corp., Los Angeles, Calif.

Model No.	40-R	40-G	40-F	60-R	60-G	60-F
Overall Dimensions (In.)						
Width	54	54	54	82	82	82
Depth	33	33	33	33	33	33
Height	78	78	78	78	78	78
Capacity of box net cu. ft.	30	30	30	50	50	50
Condensing Unit						
Model No.	AE-33H	AE-33H	AE-33H	AG-50	AG-50	AG-50
Compressor Model No.	E	E	E	G	G	G
Capacity (B.t.u./hr with 25° evaporator)	2200	2200	2200	3100	3100	3100
Thickness of Insulation (In.)						
Top	4	4	4	4	4	4
Sides	4	4	4	4	4	4
Bottom	4	4	4	4	4	4

* * *

Cabinet
Make of cabinet .....Super-Cold

Method of Cooling
Type of cooling...Cross fin overhead type
Make of coil used.....Super-Cold
Type of refrigerant control..Thermostatic
Make of refrigerant control.....Detroit Lubricator

Control
Type .....Low pressure
Make .....Penn

Insulation
Kind .....Supertex

Compressor
Make of condensing unit.....Super-Cold
Type of compressor.....Open
Refrigerant .....Methyl chloride

Materials Used
Exterior and finish.....Gumwood, Dulux or porcelain
Interior and parts.....Spruce plywood, Dulux or porcelain

Special Features
Available with ice maker insulated away from storage compartment and water cooler with capacity of 5 gallons per hour.

McCray

McCray Refrigeration Sales Corp.
Kendallville, Ind.

Model No.	7
Overall Dimensions (In.)	
Width	46⅛
Depth	28⅛
Height	73½
Capacity of unit (cu. ft.)	21.6

Condensing Unit
Model No. .....
Compressor Model No. .....
Capacity (B.t.u./hr.) .....

Thickness of Insulation (In.)
Top 3
Sides 3
Bottom 3

Cabinet
Make of cabinet .....McCray

Method of Cooling
Type of cooling.....Finned coil
Make of coil .....McCray
Refrigerant control.....Thermostatic expansion valve
Make of refrigerant control.....Fedders

Control
Type .....Thermostat
Make .....
Model No. .....

Compressor
Make of condensing unit.....McCray
Type of compressor.....Open
Refrigerant .....Methyl chloride

Insulation
Kind .....Corkboard

Materials Used
Exterior & finish .....
Interior & parts .....

General Electric

General Electric Co.
Nela Park, Cleveland, Ohio.

Make of cabinet.....Manufactured to General Electric specifications

Model No.	CS-450	CD-600
Overall Dimensions		
Width	79 15/16	79 15/16
Depth	30⅛	36½
Height	72¼	72¼
Capacity of unit net volume (cu. ft.)	45	58

Compressor

Condensing Model No.	CMF-45	CMF-45
Compressor Model No.	...	...
Capacity (B.t.u./hr.)	...	...

Method of Cooling
Type of cooling...Conditioned air cooling unit
Make of coil used.....General Electric
Type of refrigerant control..Thermostatic expansion valve
Make of refrigerant control.....Detroit Lubricator

Control
Type ..... Back pressure
Make ..... Penn
Model No. .....

Compressor
Make of condensing unit.....General Electric
Sealed or open type.....Open
Refrigerant used Freon-12

Insulation
Kind .....
Thickness (in.) 3½

Materials Used in Construction
Porcelain front and doors. Top and sides finished in white lacquer. Textolite door strips. Chrome-finished hardware. All porcelain interior.

Special Features
Shelf spacing adjustable in 2-in. steps. Glass doors available for both cabinets.

Prize Drawing Features San Antonio Show

SAN ANTONIO, Tex.—A major drawing for cash prizes participated in by purchasers, was a feature of the Spring Refrigeration Show and Home Appliance Fair held in the Municipal Auditorium here April 27 to May 2.

Claimed to be the most estensive presentation of its kind in the history of San Antonio, the show contained displays of the following makes of refrigerators: Kelvinator, Frigidaire, Norge, Stewart-Warner, Coldspot, Hot Point, Electrolux, and Leonard.

Nightly attendance prizes were given in connection with the Home Appliance Fair in which all types of electrical appliances were shown.

To Distribute Gibson

UTICA, N. Y.—A. W. Rizika was recently appointed distributor of Gibson refrigerators in this territory.

CARBONDALE MACHINES WHERE DEPENDABILITY COUNTS

CARBONDALE

COMPACT
COMPLETELY EQUIPPED
CORRECTLY BALANCED
RUGGED STRENGTH

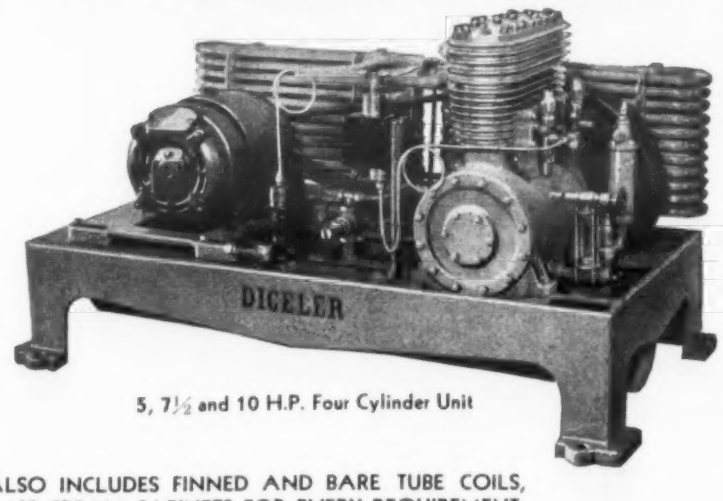
AIR CONDITIONING AND COMMERCIAL REFRIGERATION

CARBONDALE MACHINE CORPORATION
UNIT OF WORTHINGTON PUMP AND MACHINERY CORPORATION
General Offices: HARRISON, NEW JERSEY
Branch Offices and Representatives throughout the World

DICELER
Accepted
by Leaders in Refrigeration and Air Conditioning Industry

FOUR CYLINDER REFRIGERATION

BECAUSE every detail of design and construction is based on complete, accurate knowledge of industry's most exacting requirements. When you install refrigeration equipment, you want to know that it is right for your customers' requirements. You want to know that it has power to provide the refrigeration needed day after day—without fail. Individual requirements are met with a condensing unit designed for exact need. There are 35 DICELER models, one, two and four cylinder compressors, from 1/6 H.P. to 10 H.P. from which to choose.



5, 7½ and 10 H.P. Four Cylinder Unit

THE DICELER LINE ALSO INCLUDES FINNED AND BARE TUBE COILS, UNIT COOLERS AND ICE CREAM CABINETS FOR EVERY REQUIREMENT.

DICELER literature will be gladly sent upon request.

DEISSLER MACHINE COMPANY
GREENVILLE, PENNSYLVANIA
EXPORT DEPARTMENT, 15 LAIGHT STREET, NEW YORK

Starr Freeze

The Starr Co.
Richmond, Ind.

Compressor—Bellows shaft seal. Cylinder head cooled by air in air-cooled models, water in water-cooled models. Splash lubrication. White refrigeration oil, viscosity 315.

Condenser and Liquid Receiver—Counter-flow condenser and receiver tank combined. Condenser located below compressor. Horizontal liquid receiver. Fusible safety plug only as provided in controls. All models have refrigerant filter.

Materials Used—Cast cylinder block and pistons. Copper condenser tubing. Steel condenser shell.

Control—Cutler-Hammer and Detroit Lubricator temperature and pressure control. Models supplied with high-pressure cut-out and overload cut-out as ordered. Condensing water flow controlled by water valve. Electrimatic water-regulating valve.

Valves—Disc-type intake and discharge valves.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
JR-SA	...	...	...	...	408	542	408	362	⅛	2	1⅛ x 1¼	1.60	2½ lbs.	SO_2	Air	Open	Reciprocating	Belt	10 oz.	20 x 16 x 12½
J1-SA	...	...	...	...	550	723	550	551	⅛	2	1⅛ x 1¼	1.60	2½ lbs.	SO_2	Air	Open	Reciprocating	Belt	10 oz.	20 x 16 x 12½
J3-MA	...	...	...	...	500	924	500	679	⅛	2	1⅛ x 1¼	1.26	1½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	10 oz.	20 x 16 x 12½
J5-SA	...	...	...	..	650	858	650	580	⅛	2	1⅛ x 1¼	1.60	2½ lbs.	SO_2	Air	Open	Reciprocating	Belt	10 oz.	20 x 16 x 12½
J7-MA	...	...	...	...	600	1,108	600	815	⅛	2	1⅛ x 1¼	1.26	1½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	10 oz.	20 x 16 x 12½
J8-MA	...	...	...	...	600	1,160	600	844	⅛	2	1⅛ x 1¼	1.26	1½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	10 oz.	20 x 16 x 12½
AT-SA	...	...	...	...	300	545	300	369	⅛	1	1.64 x 1⅝	1.60	2 lbs.	SO_2	Air	Open	Reciprocating	Belt	15 oz.	17½ x 14 x 12¾
A1-SA	...	...	...	...	408	741	408	500	⅛	1	1.64 x 1⅝	1.60	2½ lbs.	SO_2	Air	Open	Reciprocating	Belt	15 oz.	18¾ x 14 x 14½
A3-MA	...	...	...	...	408	1,040	408	765	⅛	1	1.64 x 1⅝	1.26	1½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	15 oz.	18¾ x 14 x 14½
B0-MA	...	...	...	...	300	1,530	300	1,166	¼	2	1.64 x 1⅝	5.91	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	22 oz.	29½ x 16 x 18½
B1-SA	...	...	...	...	400	1,436	400	968	¼	2	1.64 x 1⅝	7.50	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	22 oz.	29½ x 16 x 18½
B3-MA	...	...	...	...	400	1,807	400	1,482	⅓	2	1.64 x 1⅝	5.91	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	22 oz.	29½ x 16 x 18½
B5-SA	...	...	...	...	500	1,818	500	1,229	⅓	2	1.64 x 1⅝	7.50	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	22 oz.	29½ x 16 x 18½
B7-MA	...	...	...	...	500	2,552	500	1,876	½	2	1.64 x 1⅝	5.91	4½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	22 oz.	29½ x 16 x 18½
B9-SA	...	...	...	...	600	2,186	600	1,427	½	2	1.64 x 1⅝	7.50	6 lbs.	SO_2	Air	Open	Reciprocating	Belt	22 oz.	29½ x 16 x 18½
B2-SW	...	...	...	...	400	1,495	400	988	¼	2	1.64 x 1⅝	5 95	5 lbs	SO_2	Water	Open	Reciprocating	Belt	22 oz.	33 x 16½ x 26
B4-MW	...	...	...	...	425	2,268	425	1,651	⅓	2	1.64 x 1⅝	4.69	3½ lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	22 oz.	33 x 16½ x 26
B6-SW	...	...	...	...	500	1,835	500	1,268	⅓	2	1.64 x 1⅝	5.95	6 lbs.	SO_2	Water	Open	Reciprocating	Belt	22 oz.	33 x 16½ x 26
B8-MW	...	...	...	...	550	2,933	550	2,136	½	2	1.64 x 1⅝	4.69	4½ lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	22 oz.	33 x 16½ x 26
B10-SW	...	...	...	...	750	2,840	750	1,901	½	2	1.64 x 1⅝	5.95	6 lbs.	SO_2	Water	Open	Reciprocating	Belt	22 oz.	33 x 16½ x 26
D3-MA	...	...	...	...	350	3,690	350	2,713	¾	2	2⅛ x 2	10.60	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	37 x 22½ x 24½
D5-SA	...	...	...	...	450	3,380	450	2,283	¾	2	2⅛ x 2	13.45	6 lbs.	SO_2	Air	Open	Reciprocating	Belt	4 pts.	37 x 22½ x 24½
D7-MA	...	...	...	...	500	5,273	500	3,877	1	2	2⅛ x 2	10.60	5 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	37 x 22½ x 24½
D9-SA	...	...	...	...	600	4,508	600	3,045	1	2	2⅛ x 2	13.45	7 lbs.	SO_2	Air	Open	Reciprocating	Belt	4 pts.	37 x 22½ x 24½
DD11-MA	...	...	...	...	733	7,728	733	5,682	1½	2	2⅛ x 2	10.60	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	4 pts.	37 x 22½ x 24½
D4-MW	...	...	...	...	350	3,832	350	2,805	¾	2	2⅛ x 2	8.40	4 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	32¾ x 16 x 26
D6-SW	...	...	...	...	500	3,912	500	2,619	¾	2	2⅛ x 2	10.66	6 lbs.	SO_2	Water	Open	Reciprocating	Belt	4 pts.	32¾ x 16 x 26
D8-MW	...	...	...	...	500	5,514	500	3,620	1	2	2⅛ x 2	8.40	5 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	32¾ x 16 x 26
D10-SW	...	...	...	...	733	5,736	733	3,839	1	2	2⅛ x 2	10.66	7 lbs.	SO_2	Water	Open	Reciprocating	Belt	4 pts.	32¾ x 16 x 26
D12-MW	...	...	...	...	733	8,082	733	5,884	1½	2	2⅛ x 2	8.40	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	32¾ x 16 x 26
E1-SA	...	...	...	...	350	7,864	350	5,308	1½	2	3 x 3	19.45	12 lbs.	SO_2	Air	Open	Reciprocating	Belt	7½ pts.	34 x 25 x 27
E3-MA	...	...	...	...	350	11,039	350	8,119	2	2	3 x 3	15.33	8½ lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	7½ pts.	34 x 25 x 27
E5-SA	...	...	...	..	425	9,551	425	6,452	2	2	3 x 3	19.45	15 lbs.	SO_2	Air	Open	Reciprocating	Belt	7½ pts.	34 x 25 x 27
E7-MA	...	...	...	..	425	13,447	425	9,857	3	2	3 x 3	15.33	10 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	7½ pts.	34 x 25 x 27
E2-SW	...	...	...	...	350	8,189	350	5,483	1½	2	3 x 3	12.97	12 lbs.	SO_2	Water	Open	Reciprocating	Belt	7½ pts.	35 x 19¾ x 29
E4-MW	...	...	...	...	350	11,039	350	8,406	2	2	3 x 3	10.22	8½ lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7½ pts.	35 x 19¾ x 29
E6-SW	...	...	...	...	475	11,123	475	7,446	2	2	3 x 3	12.97	18 lbs.	SO_2	Water	Open	Reciprocating	Belt	7½ pts.	35 x 19¾ x 29
E8-MW	...	...	...	...	475	15,668	475	11,408	3	2	3 x 3	10.22	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	7½ pts.	35 x 19¾ x 29
F1-MW	...	...	...	...	517	20,000	517	14,562	3	2	3¼ x 3	15	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	12 pts.	41 x 20 x 34
F2-MW	432	35,011	...	...	432	16,704	432	12,183	3	2	3¼ x 3	15	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	12 pts.	41 x 20 x 34
F3-MW	600	...	...	...	600	23,228	600	16,913	3	2	3¼ x 3	15	12 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	12 pts.	41 x 20 x 34
F4-MW	650	52,715	...	...	650	25,177	650	18,316	5	2	3¼ x 3	30	24 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	12 pts.	41 x 20 x 34
F5-FW	517	...	...	...	517	22,191	517	16,062	3	2	3¼ x 3	36	15 lbs.	F-12	Water	Open	Reciprocating	Belt	12 pts.	41 x 20 x 34
F6-FW	432	37,099	...	...	432	18,531	432	13,415	3	2	3¼ x 3	36	15 lbs.	F-12	Water	Open	Reciprocating	Belt	12 pts.	41 x 20 x 34
F7-FW	600	...	...	...	600	25,769	600	18,651	3	2	3¼ x 3	36	15 lbs.	F-12	Water	Open	Reciprocating	Belt	12 pts.	41 x 20 x 34
F8-FW	650	55,820	...	..	650	27,912	650	20,205	5	2	3¼ x 3	72	24 lbs.	F-12	Water	Open	Reciprocating	Belt	12 pts.	41 x 20 x 34
G1-MW	500	85,910	..	..	500	38,720	500	28,193	7½	4	3¼ x 3	64	30 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G2-MW	600	98,717	..	.	600	46,480	600	33,843	7½	4	3¼ x 3	64	30 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G3-MW	...	...	..	...	650	50,355	650	36,636	7½	4	3¼ x 3	64	30 lbs	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G4-MW	650	105,431	...	...	650	50,355	650	36,636	10	4	3¼ x 3	64	40 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G5-FW	...	...	...	...	500	42,942	500	31,094	7½	4	3¼ x 3	154	35 lbs.	F-12	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G6-FW	600	103,127	...	...	600	51,563	600	37,469	7½	4	3¼ x 3	154	35 lbs.	F-12	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G7-FW	...	...	...	...	650	55,824	650	40,418	7½	4	3¼ x 3	154	35 lbs.	F-12	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G8-FW	650	111,725	...	...	650	55,824	650	40,418	10	4	3¼ x 3	154	50 lbs.	F-12	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G9-MW	...	...	...	...	450	34,834	450	25,378	5	4	3¼ x 3	64	25 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G10-MW	350	56,700	..	...	350	27,104	350	19,735	5	4	3¼ x 3	64	25 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G11-MW	...	...	...	...	500	38,720	500	28,193	5	4	3¼ x 3	64	25 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G12-FW	...	...	...	..	450	38,666	450	27,987	5	4	3¼ x 3	154	30 lbs.	F-12	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G13-FW	350	60,087	...	..	350	30,048	350	21,767	5	4	3¼ x 3	154	30 lbs.	F-12	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53
G14-FW	...	...	...	...	500	42,955	500	31,097	5	4	3¼ x 3	154	30 lbs.	F-12	Water	Open	Reciprocating	Belt	24 pts.	49⅝ x 24 x 53

Phoenix

Phoenix Ice Machine Co., Cleveland, Ohio.

Compressor—Bellows and lubricated ring type shaft seal. Cylinder head cooled by air on all air-cooled models; water on all water-cooled models. Splash-type lubricating system. Oil level measured by visible sight in crankcase wall on models of ¾ hp. or larger. Smaller models, rule inserted in crankcase. Compressor oil, Suniso No. 4; viscosity, 280-300 at 100° F.

Condenser—Air-cooled models: continuous fin tube. Water-cooled models: double-tube using counterflow principle. Condenser mounted on base behind motor.

Liquid Receiver—Horizontal type. All models equipped with fusible safety plug and liquid line strainer.

Controls—Cutler-Hammer on models 25 and 33, Penn on other models through 1 hp.; Detroit Lubricator on models larger than 1 hp. Automatic low-pressure type on air-cooled units, dual control and high-pressure cutout on water-cooled units. Heater coil overload cutout. Condensing water flow controlled by head pressure. Penn water regulating valve on all but models W-1000 and W-1500, which use Electrimatic valve.

Valves—Swedish steel disc intake valves, discharge valves are disc type with secondary oil relief springs of stainless steel.

Materials Used—Cast semi-steel cylinder block. Cast iron pistons. Soft drawn copper condenser tubing.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
25	...	...	438	1,640	525	1,400	525	880	¼	2	1½ x 1¼	7.3	2 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	1½ pts.	25¾ x 17½ x 19½
												10.6	3 lbs.	F-12						
33	265	3,275	333	2,750	387	2,125	387	1,325	⅓	2	1 13/16 x 1½	7.3	3½ lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	1¾ pts.	25¾ x 17½ x 21⅜
												10.6	5½ lbs.	F-12						
W-33	310	4,725	365	3,575	407	2,960	407	2,075	⅓	2	1 13/16 x 1½	7.3	3½ lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	1¾ pts.	25¾ x 17½ x 21⅜
												10.6	5½ lbs.	F-12						
50	265	4,575	335	3,900	430	3,300	430	2,300	½	2	2¼ x 1½	8.37	4 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	2 pts.	32 x 19⅛ x 22¼
												12.1	6 lbs.	F-12						
W-50	330	7,000	385	5,350	460	4,175	460	3,000	½	2	2¼ x 1½	8.37	4½ lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	2 pts.	32 x 19⅛ x 22¼
												12.1	7 lbs.	F-12						
75	280	6,500	348	5,650	420	4,400	420	3,150	¾	2	2¼ x 2	8.37	4½ lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	3 pts.	32 x 19⅛ x 24⅝
												12.1	7 lbs.	F-12						
W-75	350	10,350	415	8,150	515	7,025	515	4,600	¾	2	2¼ x 2	8.37	5 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	3 pts.	32 x 19⅛ x 24⅝
												12.1	7½ lbs.	F-12						
100	240	9,600	300	7,800	365	7,000	365	4,900	1	2	2¼ x 3	15.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 24¾ x 29¼
												22	12 lbs.	F-12						
W-100	300	14,400	370	10,850	420	9,000	420	6,400	1	2	2¼ x 3	15.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 24¾ x 29¼
												22	12 lbs.	F-12						
150	290	15,200	365	12,600	425	10,600	425	6,650	1½	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30¾
												22	12 lbs	F-12						
W-150	365	21,500	420	15,950	475	13,500	475	9,750	1½	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30
												22	12 lbs.	F-12						
200	380	18,600	475	15,000	535	12,600	535	8,900	2	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Air	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30¾
												22	12 lbs.	F-12						
W-200	475	28,125	540	22,275	640	17,050	640	11,900	2	2	2½ x 3	15.1	8 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	4½ pts.	38½ x 26 x 30
												22	12 lbs.	F-12						
W-300	455	35,950	550	30,750	640	25,750	640	18,750	3	3	2½ x 3	27.8	12 lbs.	CH_3Cl	Water	Open	Reciprocating	V-Belt	7½ pts.	52½ x 24¾ x 32½
												40	14 lbs.	F-12						
W-500	460	64,000	550	50 150	618	41,300	618	29,650	5	3	3¼ x 3	27.8	5 lbs.*	CH_3Cl	Water	Open	Reciprocating	V-Belt	7½ pts.	52½ x 24¾ x 33
												40	5 lbs.*	F-12						
W-750	365	101,250	440	84.750	505	73,500	505	52,500	7½	3	4 x 4¼	47	8 lbs.*	CH_3Cl	Water	Open	Reciprocating	V-Belt	12 pts.	58¾ x 32⅝ x 39½
												68	8 lbs.*	F-12						
W-1000 ...	440	129,750	510	102,500	570	79,750	570	57,900	10	3	4 x 4¼	47	8 lbs.*	CH_3Cl	Water	Open	Reciprocating	V-Belt	12 pts.	58¾ x 32⅝ x 39½
												68	8 lbs.*	F-12						
W-1500 ...	570	169,500	570	110,500	...	...	...	...	15	3	4 x 4¼	47	8 lbs.*	CH_3Cl	Water	Open	Reciprocating	V-Belt	12 pts.	58¾ x 32⅝ x 41¼
												68	8 lbs.*	F-12						

†Speeds and capacities listed are for methyl chloride charged units only. *Holding charge.

AIR CONDITIONING SPECIFICATIONS IN THE MAY 20 ISSUE

REFRIGERATED DISPLAY CASES

Super-Cold

Super-Cold Corp., Los Angeles, Calif.

Model No.	300	400	500	600	700	300	910-V
Overall Dimensions (In.)							
Length (ft.)	6	7	8	10	12	14	10
Height (in.)	50	50	50	50	50	50	60
Depth (in.)	35½	35½	35½	35½	35½	35½	35
Condensing Unit							
Capacity of unit	...	...	...	...	...	...	...
Model No.	AD-25	AD-25	AD-25	AE-33	AE-33H	AG-50	AG-50
Compressor Model No.	A	A	A	E	E	G	G
Capacity (B.t.u./hr with 25° evaporator)	1600	1600	1600	2200	2200	3100	3100
Thickness of Insulation (In.)							
Top	3	3	3	3	3	3	2
Bottom	5	5	5	5	5	5	2
Sides	5	5	5	5	5	5	3

Cabinet
Make of cabinet.....Super-Cold

Method of Cooling
Type of cooling.....Direct expansion. Top coil finned. Lower coils plain tubing. (Model 910-V, plain tube evaporators.)
Make of coil.....Super-Cold
Refrigerant control .....Thermostatic
Make of refrigerant control.....Detroit Lubricator

Control
Type .....Low-pressure switch
Make .....Penn, Tagliabue
Model No. .....

Insulation
Kind.....Corkboard and SuperTex

Compressor
Make of condensing unit.....Super-Cold
Type of compressor.....Open
Refrigerant .....Methyl chloride

Materials Used
Exterior & finish....Mahogany, porcelain, or golden oak finish
Interior and parts.....Galvaneal metal finished with Dulux (not finished on 910-V)

Special Features
Sweat-proof drain pans, sweat-proof fronts. Model 910-V (fruit and vegetable case): Upper section vegetables in open with cold air passing over them, bringing the humidity to the dew point.

McCray

McCray Refrigerator Sales Corp., Kendallville, Ind.

Model No.	D-5	308	310	312	310-DD	312-DD
Overall Dimensions (In.)						
Length	60	96	120	144	120	144
Depth	35⅝	35⅝	35⅝	35⅝	35½	35½
Height	54	50	50	50	50	50
Capacity (cu.ft.)	29.7	24.9	31.68	38.4	53	67.7
Condensing Unit						
Model No.	...	...	...	...	...	...
Compressor Model No.	...	...	...	...	...	...
Capacity (B.t.u./hr.)	...	...	...	...	...	...
Thickness of Insulation (In.)						
Top	3	3	3	3	3	3
Sides	3	3	3	3	3	3
Bottom	3	3	3	3	3	3

Cabinet
Make of cabinet .....McCray

Method of Cooling
Type of cooling...Finned coils (all models) and bare tube coils (all except D-5)
Make of coil .....McCray
Refrigerant control.....Thermostatic expansion valve
Make of refrigerant control.....Detroit Lubricator

Insulation
Kind .....Corkboard

Control
Type .....Pressurestat
Make .....Penn
Model No. .....LSCP

Compressor
Make of condensing unit.....McCray
Type of compressor.....Open
Refrigerant .....Methyl chloride

Materials Used
Exterior and finish.....
Interior .....

Winter Air

Winter Air Products Corp., Chicago, Ill.

Model No. **84-D**

Make of cabinet ..... Winter Air

Overall Dimensions
Length ..... 7 ft.
Depth ..... 35 in.
Height ..... 52½ in
Capacity of unit (cu. ft. total).....33

Method of Cooling
Type of cooling.....Forced air cooling
Make of coil used.....Winter Air
Type of refrigerant control...Thermostatic expansion valve
Make of refrigerant control.....Detroit Lubricator

Control
Type ..... Temperature
Make..... Minneapolis Honeywell
Model No. T-414-1

Compressor
Make of condensing unit....Westinghouse
Condensing Model No. AFB-33H
Compressor Model No. ..... B
Sealed or open type....Hermetically sealed
Capacity (B.t.u./hr.) 2700
Refrigerant used ..... Freon

Insulation
Kind ..... Dry Zero
Thickness ..... 3 in.

Materials Used in Construction
Material on exterior finish.....All welded exterior with porcelain and high baked Dulux
Finish of interior and parts.....Porcelain and high baked Dulux

Hussmann-Ligonier

Hussmann-Ligonier, St. Louis, Mo.
Model No. ST-600
Make of cabinet .....

Overall Dimensions
Width .....6 to 12 ft.
Depth .....
Height .....
Capacity of unit .....

Method of Cooling
Type of cooling.....Finned coils
Make of coil used.....Hussmann-Ligonier
Type of refrigerant control..Thermostatic expansion valve
Make of refrigerant control.....Detroit Lubricator Co.

Control
Type ..... Automatic low pressure
Make.....Penn Electric or Cutler-Hammer
Model No. .....LCP (Penn) 9504 (C-H)

Compressor
Make of condensing unit .....Hussmann-Ligonier
Condensing Unit Model No....Depends on local conditions
Compressor Model No. .....
Sealed or open type.....Open
Capacity (Bt.tu./hr.) .....
Refrigerant used ..... Methyl chloride

Insulation
Kind .....Low density cork board
Thickness in top .....
Thickness in sides .....
Thickness in bottom .....

Materials Used in Construction
Exterior finish.....Porcelain enamel
Finish of interior and parts.....Stainless steel and porcelain enamel

Special Features
Stainless steel lining—Mahogany drip pans.

Texas Creamery Adds New Refrigerated Truck To Ice-Cream Fleet

CORSICANA, Tex. — Because the Nicholson Creamery Co. here obtained double-duty service from the two refrigerated ice cream trucks which it has operated for the past three years, the company recently purchased a third truck, similarly equipped, containing a Century Whitaker-Upp electric power system, manufactured by the Century Electric Co. of St. Louis, Mo.

The trucks were used by the Creamery Co. not only for distributing its products, but also to provide additional space in which to harden its ice cream, since that of the creamery was not sufficient, The trucks could be used as hardening-rooms, simply by adjusting the thermostatic control to obtain the required refrigeration temperature.

Kastner Does Complete Installation Job

CHICAGO — Kastner Refrigeration Sales, commercial refrigeration dealer, has made a complete installation in Ruda's Market, 2735 W. 22nd St. here, from manufacturing and refrigerating the cases and coolers to redoing the walls with porcelain wall panelling.

A walk-in cooler 8 x 13 x 9 ft. and 8, 10, and 12-ft. cases are refrigerated by two Ice-O-Matic machines, one ¾ hp. and one 1½ hp. with methyl chloride.

Fedders coils and thermostatic expansion valves were used in the installation.

To Distribute Super-Cold

DALLAS—Super-Cold Refrigerating Co. was recently formed by H. W. Cline, Mr. Pierce, and Jack Langston to replace the former Super-Cold distributor here.

They're Moving - - -

An Editorial, in the April 8th, 1936 issue of Electric Refrigeration News states that "Commercial Refrigeration is getting good again."

What do you mean *"getting* good"? That's certainly the height of understatement—if the records of the Seeger Refrigerator Company, Saint Paul, Minnesota, are any criterion.

Seeger is certainly going places, as every branch from coast to coast, has shown tremendous gains every month. Although January 1936 sales were double those of January 1935—March 1936 sales were double those of January 1936. The March gain over January of this year by Branches shows New York 100%—Boston 175%—Chicago 100%—Los Angeles 200%. Display Case Sales for the first two weeks in April, were double those of the entire month of March.

These remarkable figures are the result of many factors—but primarily it's in the product of the Seeger Factory. Every Commercial Cabinet and Display Case that leaves the Seeger Refrigerator factory is built to give the utmost satisfaction to the Grocer, Meat Merchant, Delicatessen Dealer, Institution or Restaurant—in economy of operation, durability, appearance, convenience—at a price that's extremely low for what the customer gets. This is extremely important as there are no extras—everything is complete, all ready for the compressor which is furnished by Electrical Refrigeration Dealers and Distributors.

Another factor in the Seeger increase in Sales is the Seeger Refrigerator Company's policy of having the Branches exercise entire control of sales in their territories, whereby Electric Refrigeration Dealers and Distributors can be given quick assistance to profitable sales. Any Seeger branch or the Home Office, will gladly help in the closing of a purchase of Display Cases and Commercial Cabinets. As complete lines of Commercial Cabinets and Display Cases are in stock at each of the Branches, prompt delivery can be made.

Seeger Advertising—without interruption—has consistently kept the merits of Seeger equipment before hundreds of thousands of Grocers, Meat Merchants, Delicatessen Dealers, Hotels, Hospitals, Restaurants, Cafes and Inns. Inquiries have been turned into sales by Electric Refrigeration Dealers with the help of Seeger Illustrated Literature, which is available upon request—either from the Factory or nearest branch office.

It's your move

You'll certainly be in the King Row with Seeger Display Cases or Commercial Cabinets. So very many different models are carried in stock, that the requirements and specifications of your Grocery and Meat Departments can quickly, easily and economically be filled.

You are invited to use the Seeger Refrigeration Engineering Department for any unusual installation Problem.

It's your Move—May we tell you what we have?

Seeger REFRIGERATOR COMPANY
ST. PAUL, MINNESOTA
New York — Boston — Chicago — Los Angeles — San Francisco
Special Representatives:
Meyer Smith Co., Buffalo, N. Y., Seeger-Philadelphia, Inc., Philadelphia, Pa.

SEEGER REFRIGERATOR CO., St. Paul, Minn.
Please send information on Commercial Cabinets and Display Cases.
Name.....
Street Address .....
City .....State.....

196,526

Grocery — Meat and Delicatessen Dealers — Hotel, Restaurant and Tavern Managers will see this ad.

Nash

Nash Refrigeration Co., Inc.
Newark, N. J.

Compressor—Sylphon shaft seal with adjustable chuck on shaft. Cylinder head cooled by air, refrigerant, or water. Splash-type lubricating system. Oil level measured by plug; Models 500-W and larger, bull's eye. Sunisco No. 4 compressor oil, with viscosity of 10.

Condenser—Air-cooled models: shell and tube. Water-cooled: double tube. Condenser located in front of body and motor.

Liquid Receiver—Horizontal type. Water-cooled models 150 and larger have fusible safety plug. All models have refrigerant filter.

Materials Used—Cylinder block: semi-steel. Pistons: cast iron. Condenser tubing: copper.

Controls—Penn pressure or temperature control. All water-cooled models, and all air-cooled models over ¾ hp. have high pressure cutout. Thermal relay overload cutout. Condensing water flow controlled by pressure-operated valve. Penn water regulating valve.

Valves—Case and disc-type intake valves. Spring and disc discharge valves.

Model No.	Refrigeration Capacity* 23° R.p.m.	23° B.t.u.	14° R.p.m.	14° B.t.u.	5° R.p.m.	5° B.t.u.	-4° R.p.m.	-4° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
25-A	385	1,656	385	1,368	385	1,140	385	816	¼	2	1⅝ x 1	5	...	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	30 x 22 x 18
13-A	525	2,404	525	1,949	525	1,572	525	1,200	⅓	2	1⅝ x 1	5	...	CH_3Cl	Air	Open	Reciprocating	Belt	2 pts.	30 x 22 x 18
33-A	310	2,742	310	2 312	310	1,724	310	1,350	⅓	2	1⅝ x 2	7	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2¾ pts.	30 x 22 x 22
33-W	360	3,384	360	2,686	360	2,140	360	1,685	⅓	2	1⅝ x 2	7	4 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2¾ pts.	30 x 22 x 22
50-A	390	3,410	390	2,792	390	2,180	390	1,712	½	2	1⅝ x 2	7	...	CH_3Cl	Air	Open	Reciprocating	Belt	2¾ pts.	30 x 22 x 22
50-W	480	4,692	480	3,660	480	2,820	480	2,160	½	2	1⅝ x 2	7	...	CH_3Cl	Water	Open	Reciprocating	Belt	2¾ pts.	30 x 22 x 22
57-A	552	4,707	552	3.827	552	2,868	552	2,347	¾	2	1⅝ x 2	7	4 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	2¾ pts.	30 x 22 x 22
57-W	650	6,120	650	5,100	650	3,960	650	3,060	¾	2	1⅝ x 2	7	4 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	2¾ pts.	30 x 22 x 22
75-A	320	5,082	320	4,160	320	3,144	320	2,620	¾	2	2¼ x 2¼	11	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3¼ pts.	30 x 22 x 25
75-W	360	6,570	360	5,472	360	4,384	360	3,420	¾	2	2¼ x 2¼	11	6 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3¼ pts.	30 x 22 x 25
100-A	406	7,560	405	6 120	405	4,815	405	3,672	1	2	2¼ x 2¼	11	8 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3¼ pts.	35 x 30 x 25
100-W	480	9,900	480	7,800	480	6,030	480	4,620	1	2	2¼ x 2¼	11	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3¼ pts.	35 x 30 x 25
115-A	490	11,840	490	8,960	490	6,985	490	5,220	1½	2	2¼ x 2¼	11	...	CH_3Cl	Air	Open	Reciprocating	Belt	3¼ pts.	35 x 30 x 25
115-W	585	15,240	585	11,980	585	9,140	585	6,820	1½	2	2¼ x 2¼	11	...	CH_3Cl	Water	Open	Reciprocating	Belt	3¼ pts.	35 x 30 x 25
150-A	435	12,240	435	9,900	435	7,800	435	6,004	1½	2	2¼ x 3	13	11 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	3½ pts.	35 x 30 x 27
150-W	575	15,960	575	12,660	575	9,810	575	7,500	1½	2	2¼ x 3	13	11 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	3½ pts.	35 x 30 x 27
200-A	275	16,200	275	13 200	275	10,560	275	8,164	2	2	3¼ x 3½	20	...	CH_3Cl	Air	Open	Reciprocating	Belt	6 pts.	41 x 32 x 30
200-W	330	21,900	330	17,400	330	13,560	330	10,260	2	2	3¼ x 3½	20	14 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	41 x 32 x 30
300-W	480	33,900	480	26,700	480	21.000	480	15,900	3	2	3¼ x 3½	20	14 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	6 pts.	41 x 32 x 30
500-W	295	47,400	295	37,320	295	29,400	295	22,200	5	2	3⅞ x 3⅞	25	...	CH_3Cl	Water	Open	Reciprocating	Belt	8 pts.	41 x 34 x 34
750-W	340	72,000	340	57.000	340	44,400	340	33,900	7½	4	3⅞ x 3⅞	45	...	CH_3Cl	Water	Open	Reciprocating	Belt	10 pts.	64 x 36 x 42
1000-W	425	96,000	425	75.600	425	59,400	425	45,000	10	4	3⅞ x 3⅞	45	...	CH_3Cl	Water	Open	Reciprocating	Belt	10 pts.	64 x 36 x 42
	50° R.p.m.	50° B.t.u.	45° R.p.m.	45° B.t.u.	41° R.p.m.	41° B.t.u.	32° R.p.m.	32° B.t.u.												
150-WF	380	22,800	380	20,400	380	18,550	380	15,120	1½	2	2¼ x 3	20	...	F-12	Water	Open	Reciprocating	Belt	3½ pts.	35 x 30 x 27
200-WF	220	31,200	220	28,200	220	25,950	220	20,880	2	2	3¼ x 3½	25	...	F-12	Water	Open	Reciprocating	Belt	6 pts.	41 x 32 x 30
300-WF	330	44,400	330	39,600	330	36,000	330	29,400	3	2	3¼ x 3½	25	...	F-12	Water	Open	Reciprocating	Belt	6 pts.	41 x 32 x 30
500-WF	365	76,500	365	69,000	365	63,000	365	50,400	5	2	3⅞ x 3⅞	35	...	F-12	Water	Open	Reciprocating	Belt	8 pts.	41 x 34 x 34
750-WF	240	105,300	240	94,800	240	86,000	240	69,595	7½	4	3⅞ x 3⅞	60	...	F-12	Water	Open	Reciprocating	Belt	10 pts.	64 x 36 x 42
1000-WF	340	150,000	340	135 000	340	123,000	340	99,000	10	4	3⅞ x 3⅞	60	...	F-12	Water	Open	Reciprocating	Belt	10 pts.	64 x 36 x 42
1500-WF	460	204,000	460	183,000	460	165,000	460	135,000	15	4	4¼ x 4¼	80	...	F-12	Water	Open	Reciprocating	Belt	10 pts.	72 x 39 x 42

*Nash methyl chloride units are rated at the following suction temperatures: 23° F., 14° F., 5° F., and -4° F. Freon units are rated at the following suction temperatures: 50° F., 45° F., 41° F., and 32° F.

O'Keefe & Merritt

O'Keefe & Merrit Co., Los Angeles, Calif.

Compressor—Rotary shaft seal. Cylinder head cooled by air or water. Splash-type lubricating system. Oil level measured by oil plug. Suniso No. 2 compressor oil. Viscosity 100 to 115 at 100° F.

Condenser—Air-cooled: fin type. Water cooled: double, counterflow. Located at rear of unit.

Liquid receiver—Horizontal type. All models have refrigerant filter.

Materials used—Cylinder block and pistons: nickel and chrome iron. Condenser tubing: copper. Condenser shell: steel.

Controls—Penn pressure control. All water-cooled models high pressure cutout. Safety overload cutout. Condensing water flow controlled by pressure Penn water regulating valve.

Valves—Flapper intake and discharge valves.

Model No.	Refrigeration Capacity† 40° R.p.m.	40° I.M.E.	20° R.p.m.	20° I.M.E.	5° R.p.m.	5° I.M.E.	-10° R.p.m.	-10° I.M.E.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
WCE-2	...	...	350	3,180	...	...	...	...	2	2	3¼ x 2½	12	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	34 x 28 x 25
WCE-3	...	...	470	4,174	...	...	...	...	3	2	3¼ x 2½	12	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	34 x 28 x 25
B-2	...	...	300	434	...	...	...	...	½	2	2 x 1¼	12	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	32 x 18 x 20
B-3	...	...	400	608	...	...	...	...	½	2	2 x 1¼	12	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	32 x 18 x 20
C-4	...	...	525	1,163	...	...	...	...	¾	2	2¼ x 1¼	12	6 lbs.	CH_3Cl	Air	Open	Reciprocating	Belt	1½ pts.	32 x 18 x 20
WCD-1	...	...	300	1,577	...	...	...	...	1	2	2½ x 2½	12	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	34 x 28 x 25
WCD-1½	...	...	425	2,209	...	...	...	...	1½	2	2½ x 2½	12	8 lbs.	CH_3Cl	Water	Open	Reciprocating	Belt	4 pts.	34 x 28 x 25

†Capacities given in pounds ice-melting effect per 24 hours.

Froskist

Parker Mfg. Co., Los Angeles, Calif.

Compressor—Rotary shaft seal. Cylinder head cooled by air or water. Splash-type lubricating system. Oil level measured by sight gauge on larger models. Type of compressor oil: dehydrated pale. Viscosity of compressor oil: 65 to 75.

Condenser—Air cooled: fin tube. Water cooled: double tube and shell and tube. Location of condenser: at side or under unit. Models ½ hp. and above have shrouded condensers.

Liquid Receiver—Horizontal or vertical.

Materials Used—Cylinder block and pistons: cast iron. Condenser tubing: copper or seamless steel. Condenser shell: electrically welded pipe.

Valves—Reed intake and discharge valves.

Controls—Cutler-Hammer or Penn pressure control. Models in 60 series and larger have high pressure cutout. Type of overload cutout: pressure. Condensing water flow controlled by condensing pressure. Penn water regulating valve.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
A-1020	...	...	450	1,340	450	927	450	576	⅛	1	1¾ x 1¼	2½†	1 lb.	*	Air	Open	Reciprocating	Belt	1 pt.	16 x 21 x 16
A-620	...	...	450	1,080	450	736	450	475	⅛	2	1¼ x 1	2½†	1 lb.	*	Air	Open	Reciprocating	Belt	1 pt.	16 x 21 x 16
A-1220	...	...	450	1,370	450	950	450	590	⅛	2	1¼ x 1¼	2½†	1 lb.	*	Air	Open	Reciprocating	Belt	1 pt.	16 x 21 x 16
A-1425-D	...	...	450	1,965	450	1,370	450	692	¼	2	1½ x 1¼	2½†	1 lb.	*	Air	Open	Reciprocating	Belt	1 pt.	16 x 21 x 16
A-1625-D	...	...	...	...	...	...	450	1,150	¼	2	1¾ x 1¼	2½†	1 lb.	*	Air	Open	Reciprocating	Belt	1 pt.	16 x 21 x 16
A-1633-D	...	...	450	2,665	450	1,858	450	1,150	⅓	2	1¾ x 1¼	2½†	1 lb.	*	Air	Open	Reciprocating	Belt	1 pt.	16 x 21 x 16
A-1625	...	...	...	...	...	...	450	1,150	¼	2	1¾ x 1¼	10†	1 lb.	*	Air	Open	Reciprocating	Belt	1 pt.	18 x 22 x 18
A-1633	...	...	450	2,665	450	1,858	450	1,150	⅓	2	1¾ x 1¼	10†	1 lb.	*	Air	Open	Reciprocating	Belt	1 pt.	18 x 22 x 18
A-1650	...	...	500	2,965	500	2,044	500	1,265	½	2	1¾ x 1¼	15†	2 lbs.	*	Air	Open	Reciprocating	Belt	1 pt.	18 x 29 x 19
A-2250	...	...	...	...	500	2,375	500	1,480	½	2	2¼ x 1¼	15†	2 lbs.	*	Air	Open	Reciprocating	Belt	1¾ pts.	20 x 29 x 19
A-2275	...	...	500	4,925	500	2,375	500	1,480	¾	2	2¼ x 1¼	15†	2 lbs.	*	Air	Open	Reciprocating	Belt	1¾ pts.	20 x 29 x 19
A-4075	...	...	360	6,150	360	4,430	360	3,140	¾	2	2⅛ x 2¼	20†	3 lbs.	*	Air	Open	Reciprocating	Belt	5 pts.	24 x 33 x 28
A-6010	...	...	360	8,850	360	6,380	360	4,530	1	2	2⅛ x 3¼	20†	3 lbs.	*	Air	Open	Reciprocating	Belt	5 pts.	24 x 33 x 28
A-6015	...	...	425	10,320	425	7,550	425	5,330	1½	2	2⅛ x 3¼	20†	3 lbs.	*	Air	Open	Reciprocating	Belt	5 pts.	24 x 33 x 28
A-6002	...	...	450	12,660	450	8,000	450	5,660	2	2	2⅛ x 3¼	20†	3 lbs.	*	Air	Open	Reciprocating	Belt	5 pts.	24 x 33 x 28
A-1002	...	...	360	16,250	360	11,725	360	8,300	2	2	3 x 3	30†	4 lbs.	*	Air	Open	Reciprocating	Belt	8 pts.	31 x 37 x 29
A-1003	...	...	450	18,660	450	11,900	450	9,175	3	2	3 x 3	30†	4 lbs.	*	Air	Open	Reciprocating	Belt	8 pts.	31 x 37 x 29
DW-2250	...	...	...	...	500	2,405	500	1,498	½	2	2¼ x 1¼	15†	2 lbs.	*	Water	Open	Reciprocating	Belt	1¾ pts.	20 x 29 x 19
DW-4075	...	...	360	7,350	360	4,930	360	3,270	¾	2	2⅛ x 2¼	20†	3 lbs.	*	Water	Open	Reciprocating	Belt	5 pts.	24 x 33 x 28
DW-6010	...	...	360	9,035	360	6,375	360	4,500	1	2	2⅛ x 3¼	20†	3 lbs.	*	Water	Open	Reciprocating	Belt	5 pts.	24 x 33 x 28
DW-6015	...	...	425	10,700	425	7,750	425	5,375	1½	2	2⅛ x 3¼	20†	3 lbs.	*	Water	Open	Reciprocating	Belt	5 pts.	24 x 33 x 28
DW-6002	...	...	450	11,640	450	8,175	450	6,250	2	2	2⅛ x 3¼	20†	3 lbs.	*	Water	Open	Reciprocating	Belt	5 pts.	24 x 33 x 28
DW-1002	...	...	360	16,450	360	11,700	360	8,375	2	2	3 x 3	30†	4 lbs.	*	Water	Open	Reciprocating	Belt	8 pts.	31 x 37 x 29
DW-1003	...	...	450	20,800	450	14,650	450	10,650	3	2	3 x 3	30†	4 lbs.	*	Water	Open	Reciprocating	Belt	8 pts.	31 x 37 x 29
DW-2005	...	...	250	32,976	250	23,400	250	16,965	5	2	4 x 4	50†	6 lbs.	*	Water	Open	Reciprocating	Belt	24 pts.	36 x 72 x 54
W-4075	...	...	360	7,350	360	4,930	360	3,270	¾	2	2⅛ x 2¼	30†	3 lbs.	*	Water	Open	Reciprocating	Belt	5 pts.	20 x 36 x 36
W-6010	...	...	360	9,035	360	6,375	360	4,500	1	2	2⅛ x 3¼	30†	3 lbs.	*	Water	Open	Reciprocating	Belt	5 pts.	20 x 36 x 36
W-6015	...	...	425	10,700	425	7,750	425	5,375	1½	2	2⅛ x 3¼	30†	3 lbs.	*	Water	Open	Reciprocating	Belt	5 pts.	20 x 36 x 36
W-6002	...	...	450	11,640	450	8,175	450	6,250	2	2	2⅛ x 3¼	30†	3 lbs.	*	Water	Open	Reciprocating	Belt	5 pts.	20 x 36 x 36
W-1002	...	...	360	16,450	360	11,700	360	8,375	2	2	3 x 3	40†	4 lbs.	*	Water	Open	Reciprocating	Belt	8 pts.	24 x 54 x 42
W-1003	...	...	450	20,800	450	14,650	450	10,650	3	2	3 x 3	40†	4 lbs.	*	Water	Open	Reciprocating	Belt	8 pts.	24 x 54 x 42
W-2007½	...	...	300	39,600	300	27,700	300	19,400	7½	2	4 x 4	65†	6 lbs.	*	Water	Open	Reciprocating	Belt	24 pts.	36 x 84 x 54
W-20010	...	...	425	56,200	425	39,300	425	27,500	10	2	4 x 4	65†	6 lbs.	*	Water	Open	Reciprocating	Belt	24 pts.	36 x 84 x 54

†Pump down capacity given for Methyl Chloride. *Sulphur Dioxide, Methyl Chloride, or Freon.

De La Vergne

De La Vergne Engine Co.
Philadelphia, Pa.

Compressor—Cylinder head cooled by air. Forced-type lubricating system.

Condenser—Fin tube or double pipe.

Liquid Receiver—Horizontal type. All models have fusible safety plug.

Controls—Make and type optional. All water-cooled models have high pressure cutout. Condensing water flow controlled by regulating valve.

Valves—Ring-type intake and discharge valves.

Materials Used—Cylinder block and pistons, cast sheet steel. Condenser tubing: copper.

Model No.	Refrigeration Capacity 40° R.p.m.	40° B.t.u.	20° R.p.m.	20° B.t.u.	5° R.p.m.	5° B.t.u.	-10° R.p.m.	-10° B.t.u.	Motor Hp.	No. of Cyl.	Bore & Stroke Inches	Pump Down Capac.	Refrigerant Quantity	Refrigerant Kind	Condenser Cooling Medium	Type of System	Type of Compressor	Compressor Drive	Quantity of Oil	Overall Dimensions Inches
C1-AA	1,750	12,000	...	...	...	...	...	...	1½	2	.....	..	7½ lbs.	Freon	*	Hermetic	Reciprocating	Direct	...	.....
C1-AW	1,750	12,000	...	...	...	...	...	...	1½	2	.....	..	7½ lbs.	Freon	*	Hermetic	Reciprocating	Direct	...	.....
C1.5-AA	1,750	18,000	...	...	...	...	...	...	2	2	.....	.	7½ lbs.	Freon	*	Hermetic	Reciprocating	Direct	...	.....
C1.5-AW	1,750	18,000	...	...	...	...	...	...	2	2	.....	..	7½ lbs.	Freon	*	Hermetic	Reciprocating	Direct	...	.....
C4-AA	1,750	48,000	...	...	...	...	...	...	5	2	.....	..	15 lbs.	Freon	*	Hermetic	Reciprocating	Direct	...	.....
C4-AW	1,750	48,000	...	...	...	...	...	...	5	2	.....	..	15 lbs.	Freon	*	Hermetic	Reciprocating	Direct	...	.....

*Water or Air.

Utility Dominates Commercial Business In Youngstown But Dealers Get Sales By Concentrating on Special Fields

By T. T. Quinn

Ohio Edison Puts Emphasis On Installation and Service

Ohio Edison Co., most competitors freely admit, gets about 90% of the commercial refrigeration business that's done in Youngstown. The company handles Frigidaire equipment. Carl Windel is commercial sales manager.

Mr. Windel was out of the office the whole time we were in town—busy on a prospective job, the secretary said—but Earl Broughton, of the company's commercial sales department, and Allen Sogg, district engineer of Ohio Edison with headquarters in Akron, proved ready sources of information on the status of commercial business at present.

Sales were good, Mr. Broughton admitted—but they weren't easy to get, especially among the merchants in Youngstown and surrounding territory.

"Most merchants have been without any extra cash for so long that, now that they have a little, the only thing they're interested in doing is hanging onto it," he said. "They're worried. They've come through a mighty tough period with whole skins—but they never know when something like that is going to come along again.

"Next time it does, they want to be ready for it. Trying to get people in that state of mind to buy refrigeration equipment is a plenty hard job."

$2,200 in Orders for Month

Despite this situation, however, Mr. Broughton wasn't inclined to be downhearted about things in general. He already had orders for $2,200 worth of equipment on his books for the next month, which ends May 25.

But competition, he said, was quite keen, especially from commercial refrigerator people.

"This is pretty much a 'price' business," he said, "and when you're licked on that score you've got a mighty rough road ahead of you, before you can make the sale. We figure we can more than hold our own with the regular run of competition, but when competitors get so far down below our figure that we are almost sure they're not making a profit on the sale, that's where we have to give up.

"Some of these companies handle commercial cases regularly, with compressors only as a sideline. When they get into a tough sale, they'll cut the price of the compressor down almost to cost, just to get the order for other equipment.

"Naturally we can't compete with that sort of thing. We've got to make a profit on every sale—otherwise, what's the use of going out after the business?"

Service Versus Price

The company has found emphasis on service the best way to combat this price competition, Mr. Broughton said.

"We tell the prospect he can get service from us at any time, day or night. Whenever anything goes wrong with his equipment, we tell him, we can have a man over to work on it within a few minutes. We keep a service man on the job 24 hours a day, and all our customers have to do is call us, and he's right out on the case.

"In this way, the merchant isn't in any danger of losing money because of food spoilage while the equipment is down, and the trouble, whatever it may be, is corrected in the shortest possible time.

"Some of the merchants have experienced this delay in getting competent service when something goes wrong—and so this angle of our selling talk makes quite an impression on them. It's brought us a good many sales which otherwise we'd have been pretty sure to lose, because our prices were higher than some of the other companies who were bidding for the jobs."

Most of the company's jobs, Mr. Broughton said, were in the $600-$700 class. Most of them, too, were finance sales. The utility itself handles all finance paper on these deals.

Carry No Refrigerators

The company has no line of commercial refrigerators and display cases, preferring to let those companies already in the field have free rein with this part of the business, without interference.

"We won't cut quality to make a price," he added. "When we put in a job, we want it to be done right, or not at all.

"The customer wants the equipment he buys to fulfill certain conditions; and it's our job to see that he gets them, plus perhaps a little more, to take care of abnormal demands which might come up from time to time."

The dairy field has been quite an active one lately, Mr. Broughton said, but there hasn't been a great deal doing in either beer or beverage cooling. Things were pretty slow around the first of the year, but during the last month there has been a marked increase in the goings-on, all the way through the line.

Apple Storage Job

Allen Sogg, Ohio Edison's district engineer, was in the Youngstown office doing some estimating work on an apple storage job to be installed in a plant at Salem, Ohio.

The storage space, he said, has a capacity of some 30,000 bushels of fruit, and is a three-floor affair. It will take between a 15 and a 20-ton capacity job to handle the requirements, he estimated.

Apple storage business, Mr. Sogg said, was beginning to be a nice field for commercial refrigeration down through his territory. Ohio is an important orchard region, and the storage business permits the placing of apples on the market at all seasons of the year. Orchardists sell their yield to the storage men, who sort and pack the fruit and keep it at cool temperatures until they ship it to market.

There is another apple storage job in prospect at present, Mr. Sogg added, over at Ravenna, Ohio. This one will be about a 7½-ton job; the storage quarters being a two-story affair.

'Cut-Throat' Competition

Mr. Sogg had something to say, also, about the "cut-throat" competition he found in the territory.

"I can't see how some companies figure to make any money out of their work," he said. "They'll take a job at a ridiculously low price, just to get the job, I guess. When they're all through, they haven't made a penny on it.

"It's getting almost so you have to be willing to take a job just about at cost, or lose out on the thing altogether. But we're not out after that kind of business. It's better to do without it."

'Cut Profit to Bone'

Mr. Sogg said there were often wide variances in the bids made on a single job, variances which he could reconcile only by assuming the dealer had cut his profits almost to the bone to get it. A good many of what he termed "fly by nighters" are also operating in the territory, he said.

"They haven't any place of business," he added. "Most of them are operating out of cars. They can sell a job on price, because they haven't any overhead to speak of. But they have no service facilities to offer, and about all they do is get in the field long enough to mess things up for the companies who are in there to make a business of it."

* * *

Mr. Kelly's New Ideas Bring Beverage Cooler Sales

R. L. Kelly, the one-man commercial department of Stambaugh-Thompson Co., was busy demonstrating one of Kelvinator's new beverage coolers when we walked in there. The prospect, evidently a small lunch—or roadside—stand operator, didn't buy—but he looked longingly at the cooler as he walked out. He'd be back.

"This new beverage cooler has been attracting a lot of attention," Mr. Kelly said. "We've sold a dozen or more of them already, and right now we've got a deal 'on the fire' with a Cleveland concern for something like 28 more of them. We ought to close that real soon now.

Help from Beverage Firms

"We've got a lot of nice cooperation from the beverage people around here, and it's had a lot to do with helping out our sales. The beverage company itself doesn't furnish its dealers with coolers, but we're on pretty good terms with the president of one of the local companies; right after we got our first coolers, I put one in his office.

"When the dealers come in to see him, they can't help but notice the new cooler on the floor there—and most of them stop to look it over. The president turns the names of these people over to us as likely prospects for new coolers, and then I got out after them.

"Another way we've found good is to have the drivers for the bottling companies act as 'bird dogs' for us, looking up prospects while they're making their deliveries. We've got some good tips in this way, and I think we'll capitalize on them as soon as the cold drink season gets a little further along."

Bonus Paid to Drivers

Bottlers' drivers are paid a bonus for each cooler sold to a prospect turned in by them. Mr. Kelly pays the sum out of his own commission on the sale.

Mr. Kelly hasn't been doing commercial selling very long—just since the first of the year. Formerly, he combined commercial and household sales, dividing his time between the two. This year, however, Kelvinator is attempting to get most of its dealers to handle commercial aggressively, and so, when the chance came up, Mr. Kelly grabbed it.

"A lot of the boys on the floor thought I was crazy to take on commercial exclusively," he said, "but I figure I'll be as well, if not better off, than I was before.

Believes Concentration Best

"There's plenty of commercial business around here, if you go after it—and if I divided my time between the household and commercial sales jobs,

(Concluded on Page 26, Column 3)

Artic
REG. U. S. PAT. OFF.
(DUPONT METHYL CHLORIDE)

for COMMERCIAL REFRIGERATION

The SPECIFICATIONS tell why!

ACIDITY—Not more than 0.001% calculated as HCl. Methods of analysis furnished on request.

MOISTURE—No more than 0.004% water. (Average analysis.)

RESIDUE—Not more than 0.01% by weight.

ODOR—Characteristically ethereal, faintly sweet. No foreign odor.

COLOR—(Liquid)—Water-white and free from cloudiness.

BOILING POINT—Between −23.6° and −24.6° C., at 760 mm.

Each cylinder tested before shipment—guaranteed to meet specifications.

For modern, low-weight, compact automatic units, ARTIC meets the refrigerant requirement, viz:

- Low head pressures
- Pressure on low side above atmospheric at sub-zero temperatures
- Low piston displacement to produce a given refrigeration effect
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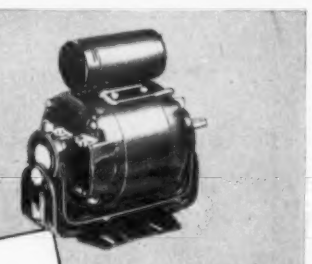

1. Reputation of the refrigerator
2. Customer good will
3. Courteous service
4. Fair prices for high quality

ADD THESE UP, AND THEN ADD ONE MORE: the additional acceptance that General Electric motors will give your product. These five factors mean SALES AT A PROFIT!

Your prospects know refrigerators by reputation, and associate high quality and good service with names well known in the appliance industry. In a similar manner they associate General Electric with the best electric equipment, for General Electric has been making fine motors for appliances as long as there has been an appliance industry.

Hence it's like adding 2 and 2—good refrigerators plus good motors, and the recognized reputation of the refrigerator manufacturer plus the recognized reputation of General Electric. They make an unbeatable sales combination in any business. General Electric, Dept. 6A-201, Schenectady, New York.

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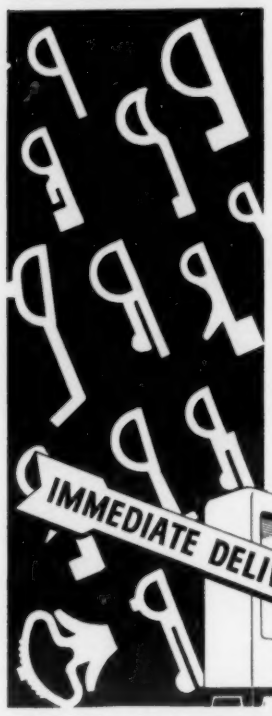
GENERAL ELECTRIC

LET G-E MOTORS HELP YOU SELL

8200 OUT OF 10,000 Say "GENERAL ELECTRIC"

In a recent impartial survey of motor buyers, a leading publisher asked: "When you are next in the market for motors and control, which manufacturers will you ask for quotations?"

General Electric was included by 8200 of the 10,000 who answered. It was first choice with 5300, as compared with 1950 for the manufacturer that ranked second.



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Miller has simplified rubber gaskets so that 20 styles will service 80 per cent of all refrigerators. For profitable repair jobs—stock these styles.

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MARINETTE » » » » » WISCONSIN

Youngstown Dealers Find Small Store Best Refrigeration Prospect Now

(Concluded from Page 25, Column 5)

chances are I wouldn't do as good a job with the combination as I will with one alone."

Mr. Kelly works three counties in and around Youngstown—Mahoning, of which Youngstown is the population center; Trumbull, with Warren as the leading city; and Lawrence (Pa.), with New Castle the only big market. There isn't much business in the smaller towns, he says, and so the territory is not as big as it might seem.

"None of the territory is more than an hour's drive from the store," he said.

Market in Smaller Stores

Biggest field of activity right now, he said, is among the smaller stores. Some of these have been without adequate refrigeration for some time, and are now ready to make long-needed improvements.

Most of the jobs have ranged between $400 and $600; practically all of them have been financed. Stambaugh-Thompson's, which claims to be the largest hardware store in the country, enjoys an excellent standing in the community. All finance paper is handled by the company itself. Terms are 20% down, with the balance payable in monthly installments over a period of 12, 18 or 24 months, with interest at 6%.

"We never run our time payments over the 24 months," Mr. Kelly said, "and we try to clean up as many as we can under that time."

Sell Gloekler Cases

The store handles the Gloekler line of commercial cases, and sells the prospect the whole installation, if he wants it, or just the refrigerating equipment, if his case is in good condition. Activity in the refrigerator field hasn't been nearly so great as in that of condensing units; but several sales have been made.

In beer dispensing, the company handles the Temprite line, in connection with Kelvinator condensing units. While not many jobs have been sold this year, Mr. Kelly says business in this particular field is in a much better state than it was in the early days after repeal.

Beer Field Much Safer

"The jobs that come in nowadays are mostly from concerns who have established trades, and who are in the business to stay. The beer equipment field has settled down pretty well, and jobs are much safer to take now than they used to be."

Several installations have been made in the territory, and they're all giving satisfactory service, Mr. Kelly said.

Water coolers are selling well, he added, and some of the industrial plants in and around Youngstown have either installed new coolers recently or are plannig to do so in the near future.

Right now he's figuring on a job with Youngstown Sheet Steel Co. for a water cooler installation which will run somewhere in the neighbourhood of $1,200.

* * *

Norge Dealer Directs Efforts At Beer Cooling & Dairy Jobs

Norge Products Co. is one of three Norge dealers in Youngstown (Van Cise Norge Co. is one of the others), and has the exclusive commercial franchise for the city. Edward Amreihn is manager of the company.

The company is new in the commercial end of the business, having handled it only since the first of the year. Gloekler commercial cases are also sold by the company.

Merchants Improving Stores

"Now that business conditions are beginning to improve, there ought to be a real market for commercial equipment," Mr. Amreihn believes. "Merchants are beginning to spend money again for improvements they've been needing for a long time."

Most of the business the company has done up to this time has been in the smaller size units using the rotary compressor. Active, so far as the company is concerned at present, are beer cooling and dairy sales. Several of these types of jobs have been closed recently, and more are in the offing.

"There isn't a lot of business in Youngstown that Ohio Edison Co. doesn't get," Mr. Amreihn said. "But we're going to try to get our share of what's left."

Installations Handled by Dealer

Installation work on jobs sold by the company is at present handled by one of the company's own men, who has received special factory training in this branch of the work. Although he needed some assistance at first, he is now able to handle most of the jobs all by himself, Mr. Amreihn said.

Estimating and checking on the various jobs is hadnled by the commercial refrigeration department of Ludwig Hommel & Co., Pittsburgh, under whose distributorship Norge Products operates. However, Mr. Amreihn thinks it won't be long before his installation man will be able to handle this end of the work satisfactorily, also.

* * *

Dealers Get Prospects For Mock Electric

Mock Electric Supply Co., Westinghouse distributor with headquarters in Canton, has a branch in Youngstown which cooperates with local dealers in the handling of commercial refrigeration sales.

About all local dealers do is to turn commercial prospects' names over to Mock's local office. From that point on, the company handles all the job itself.

Two Men Handle Territory

H. R. Frazier is in charge of the commercial sales work in the Youngstown territory, and handles commercial out of the company's Canton headquarters as well. His usual weekly routine calls for two days each week in Youngstown, two in Canton, and two in Akron.

In the department with him, in Canton, is Glen Nutter. The two men work the territory together, traveling a wide area interviewing prospects and closing sales.

The day we called was Mr. Frazier's regular day in Youngstown, but at the office it was reported he was either in Salem, trying to close a deal, or ill at his home in Canton, since one of the clerks said he had complained the day before of not feeling very well.

Nobody else in the office seemed to know very much about what was going on in the commercial field. All that work, they said, was handled by Mr. Frazier.

Post Card Booklet For Prospect Names is Given To Buyers By Dealer

KENOSHA, Wis.—A well-planned compensation program for customers who turn in the names of good prospects will bring up sales records considerably, reports F. B. Thomas of the Wisconsin Electric Co.

To encourage customers to work with the firm, Mr. Thomas has devised and issued a return post card prospect booklet. One set of three of the cards, with instructions on how to get compensation, is given every purchaser of a household appliance or radio.

Instead of handing out these booklets promiscuously, or sending them with circulars when the appliance is delivered, officials of the firm believe that the best results are obtained by having the salesman take them to the home the day after the appliance is delivered.

The salesman, when calling, compliments the customer on having purchased the radio or appliance, and carefully explains the object of the post card booklet.

Two of the cards are printed in black, and the last one in red, so that the dealer upon receiving the red card will know the customer has used the entire set and will forward him another one.

Of one lot of 1,200 cards handed out, Mr. Thomas reports that more than 80 per cent have brought in prospects' names to the dealer, and a good percentage of the prospects have become customers.

Cash compensation given to the customer when a sale is made to one of his prospects is deducted from the salesman's commission. The compensation ranges from $1.50 to $5.00 per unit, depending on the selling price of the radio or appliance purchased. One woman has earned enough by this method to buy an electric washing machine from the firm.

10,000 People Attend Refrigeration Exhibit of Detroit News

DETROIT—An approximate public turn-out of 10,000 people attended the *Detroit News* First Annual Refrigeration Show, which finished its four-day run at Masonic Temple Sunday.

Twenty exhibitors showing 15 different makes of refrigerators including Frigidaire, Westinghouse, Kelvinator, Fairbanks-Morse, Stewart-Warner, Sparton, Crosley, Norge, Copeland, Grunow, G-E, Coldspot, Electrolux, Midwest, and Leonard had booths.

Staged on a cooperative basis, the show was handled exclusively by the *News*, with each dealer paying for his booth with a quarter page advertisement in the sponsor-paper.

The rule that only refrigeration exhibits by dealers be allowed, eliminated distributors, except those with a retail outlet, and also eliminated the promotion of other appliances, even to the distribution of literature concerning them.

Free admission to the show and entertainment which was put on by members of the staff of WWJ, *Detroit News* station, was one of the drawing cards.

Miss Alice Boter, household editor of the *News*, and Miss Edith B. Crumb, Beauty in the Home editor, were present to answer questions and give household suggestions, as were Forrest Wallace, and Victor Linfoot, WWJ announcers, who also answered queries about automatic refrigerators.

Val Coffey, leader of the WWJ orchestra and his "Memory Strings," and the Wurlitzer Marimba Symphony furnished the music. C. C. Bradner, news commentator, gave one of his news broadcasts from the show each day, and "The Smoothies," harmony team, sang each afternoon.

A 14-page refrigerator suppliment put out by the *News* the day before the show opened carried approximately 1356 inches of refrigerator advertisement, advertising Westinghouse, Kelvinator, Norge, and Crosley.

Crowley-Milner, advertising Stewart-Warner, People's Outfitting, advertising Leonard, Reliable Furniture Co., advertising Frigidaire and Crosley, and Sears-Roebuck, advertising Coldspot models, were the next largest space-buyers in the special section.

A full-page institutional advertisement on the back page advised prospects that "You are paying for an electric refrigerator, whether you own one or not." Saving and convenience obtained by the purchase of the appliance, were the chief of the six new things an electric refrigerator offers, according to the copy.

Refrigerator recipes, a discussion of the size problem, the refrigerator as a guard of health, provision for the wife's trip home, proper storage of food, kitchen color planning, buying in quantity, cold baking, foot waste, storage rules, and humorous articles by men who look back over their shoulders at the "good old days" were a few of the subjects treated by the staff of the *News* in the special section.

Among the distributors and dealers exhibiting were: Nome Appliance Co., Gardner-White Furniture Co., Lind's, Midwest Radio Corp., Weil & Co., Ryal's, Inc., Federal Home Appliance Co., Good Housekeeping Shop, Home Appliance Shop, Inc., Campbell-Penfield, Inc., Dupraw's, Crowley Milner's, Wagner Electric Co., Detroit City Gas Co., Sears, Roebuck and Co., Colonial Dept. Store, People's Outfitting Co., Caswell, Inc., Reliable Furniture Co., Serlin.

Gambill Distributing Co. Opens Larger Quarters

NASHVILLE, Tenn.—Gambill Distributing Co., Crosley outlet in this territory, has opened new and larger display rooms and offices at 117-119 Ninth Ave. N.

Wheless Gambill, Jr., heads the concern.

WILLIAMS
ICE-O-MATIC

the complete line that gives
STEADY YEAR-'ROUND PROFITS

WILLIAMS Ice-O-Matic offers you a complete line of household and commercial refrigeration for steady, year-'round profit. Made by the world's largest specialists in temperature control, Ice-O-Matics are all precision engineered, and provided with auto type pressure lubrication which insures long life and economy of operation. Complete line of Milk Cooling equipment, for electric or gasoline drive. Write or wire for full details of franchise.

Williams Oil-O-Matic Heating Corp., Dept. 23-5, Bloomington, Ill.
World's Largest Specialists in Temperature Control
MANUFACTURERS AIR-O-MATIC, ICE-O-MATIC, OIL-O-MATIC

WILLIAMS ICE-O-MATIC REFRIGERATION ENGINEERED

Commercial Refrigeration

Refrigeration Has Many Uses on Model Chicken Farm Built by C. E. McManus

COCKEVILLE, Md.—Because the albumen of the chicken egg forms the most perfect binder known for cork dust, Charles E. McManus, president of the Crown Cork & Seal Co. of Baltimore, has built a model chicken and egg farm—complete with refrigeration and air conditioning—which now has a flock of 92,000, and will, when stepped up to full operation, have a maximum capacity of 400,000 chickens.

The farm is called Spring Mills Farm and is approximately 14 miles north of Baltimore, where the cork company, world's largest manufacturers of bottle closing and sealing devices, uses the egg white for the cork dust, which in turn comprises the sealing pad used inside a conventional bottle cap.

Since its start, the business grew to such proportions that adequate storage facilities for chickens and eggs became a necessity. York engineers, cooperating with Lucius R. White, supervising architect, and E. L. Crosby, of the office of Henry Adams, Inc., consulting engineers in charge of mechanical matters, were called in to design a refrigerating system, which is now in the process of installation.

Eggs Laid on Schedule

In this unique plant, nature is given every mechanical and scientific assistance in keeping her egg-laying functions up to schedule.

Each chicken has its own cage, approximately 15 inches square, by 12 inches high, and cages are arranged in tiers 3 to 5 ft. high.

The rows of cages are placed back to back with a mechanical food conveyor, which is hopper fed, running between each pair of cages on each level. Food is prepared in pellet form, scientifically worked out to assure maximum egg production.

So that the egg will roll out into the wire trough when it has been laid, the floor of each cage slopes to the front.

Small electric lights, located on the mechanical food conveyor, are turned on at dusk and allowed to burn until about 9 p.m. to attract the hen to the food and encourage consumption.

Imitating Nature

The water distributing system also takes into account the chicken's habit of catching raindrops with upturned head. Water is carried across the entire ceiling area of each house, with a vertical rod running down the partition line between every other cage.

A 2 in. break in the rod is placed at convenient head height for every chicken in each succeeding tier. The water drips down the rod, and the chicken may stick her head out at any time and catch a few drops of water.

Attached to each cage, is a record card which indicates when the chicken was placed in the cage, when she laid her first egg, the first full size usable egg, etc. Poor layers are quickly disposed of, the owner says.

Proper heating and humidity equipment to maintain constant conditions so that variations in laying ability can be kept down to a minimum, is one of the most important considerations in the plant, according to Mr. McManus.

Mating of the birds is practically eliminated at this scientific farm. No roosters are carried in stock, and all eggs for hatching are purchased from a special source, and hatched mechanically in incubator cabinets at carefully controlled and regulated automatic temperatures.

The farm has present capacity for the continuous hatching of approximately 50,000 eggs.

In addition to the use of the egg albumen for binding purposes, eggs are sold at retail on the 45-mile route of the Green Spring Dairy, also owned by Mr. McManus.

Since chicken raising on this vast scale would not be practicable for food consumption alone because of the sale and distribution problems, the management is considering the idea of killing a number of hens daily, and having a food preservers firm can them as *chicken a la king*.

Main units of the cold storage system on this unique farm consist of a 5 in. x 5 in. 2-cylinder York ammonia compressor operating at a speed of approximately 200 r.p.m. for low back pressure on the freezing room, and a 6 in. x 6 in. 2-cylinder compressor operating at low speed and higher back pressure to meet the requirements of the grading, packing, and egg storage rooms.

The low-speed compressor, according to York officials, will be stepped up to standard speed when a second egg storage room is added to the system, as may later be required for increased egg production. A 24 in. x 12 ft. vertical type, shell-and-tube condenser is located outside the engine room, the top of the condenser being at the roof level of this one-story building so that the water for the condenser may be supplied by gravity from a cooler tower on the roof.

Novel Cooling Tower

This cooling tower, an important element in the system, is of all cedar construction, 7 ft. x 18 ft. at the footing and 22 ft. high, with ten decks. Its novel construction and design, the engineers explain, was necessary in order to cool 120 gals. of water per minute through a 6° temperature range, which was calculated as the total condensing requirement.

In addition, the job called for the supplying of jacket water to two Diesel engines, located in the engine room, at the rate of 20 gals. per minute, through a temperature range of 40°. Because the water for both condensing and cooling purposes is drawn from an artesian well, the water consumption of the system is kept at a minimum in order to conserve the supply.

By utilizing the cooling tower in the double function of cooling the condenser water and the Diesel engine water, York engineers say that they have been able to secure an average cooling range within the limits of a natural-draft tower. At a very slight additional expense, therefore, the demands for Diesel engine cooling were served from this water cycle, which had been designed originally for the ammonia condenser.

In the grading and packing room, where the chickens are hung immediately after killing, an FS-7000 brine spray air-conditioning unit has been installed to maintain a temperature of about 35° F. with a relatively high humidity. This room is approximately 52 ft. long x 17 ft. wide x 9 ft. 10 in. high, and is equipped to cool 4,000 chickens per day, at an average weight of 4 lbs., from body temperature to room temperature.

Preceding this poultry grading and packing room is the room where the chickens are killed and dressed. This room does not require refrigeration.

Approximately half of the birds are disposed of directly from the grading and packing room, and half are carried to the low temperature cold storage room, to be held at a temperature of 16° F. for disposal according to market conditions. This room, which is 37 ft. x 25 ft. x 9 ft. 10 in. is kept at the desired low temperature by the use of two layers of overhead 2-in. steel piping, equipped with a gravity feed float control system and surge drum at one end of the room.

Galvanized steel supports for this piping are carried down to the floor, where the weight rests upon an oak block under each column. Each block is set upon a steel plate 16 ins. square and ½ in. thick, so that the weight is transmitted evenly to a concrete sub-slab. In this low-temperature room it is planned to store 90,000 birds, crated and packed in the usual manner.

The egg storage room, which is 55x18 ft. will be refrigerated with a brine spray unit of the FS-3500 size, located in the center of one long outside wall, so that the fresh air can be brought into the rooms as required.

Arrangement of Ducts

The system of ducts, York officials say, is so arranged that air circulation can be cut off at will, and all fresh air pulled in and discharged directly into the low temperature room to assist in defrosting the coils when necessary.

All the rooms are insulated with sheet corkboard, 4-inch thickness being used in two layers at two inches each for the grading and packing room and the egg storage room, and a thickness of 6 inches being used for the freezer. Temperature in the egg room is maintained at 29 to 51° F. with a relative humidity.

In anticipation of future production, the plan of construction provides for a future egg room, immediately above the present egg room, and somewhat larger in dimensions. York claims that the flexibility of the system will provide for this addition with very slight change, and simply stepping up the speed of the compressor which handles this part of the load. Valved outlets in the ammonia lines are also provided to take care of this later expansion in refrigerating requirement.

Puffer-Hubbard Builds New Beer Cooler Line

MINNEAPOLIS — Puffer-Hubbard Mfg. Co.'s line of beer cooler equipment for 1936, just announced, includes several new dispensers, chief of which are the "Emperor," an all-porcelain and stainless steel novelty bar, a line of "Redwood" tap boxes, and the "Combiner," a combination bottle cooler and tap box.

The "Emperor," a deluxe job built and designed for high grade restaurant, hotel, or tavern installation, is furnished with a coil for mechanical refrigeration, the expansion valve and refrigeration unit being furnished by the dealer.

The model is available in white, with black striping, or in black, and stainless steel sink, with or without top drain. Two beer taps and one water tap are standard, with a third beer tap optional if desired.

Second model in the line, the "Aristocrat," is made of steel on a spruce frame, and finished in black Bakelite enamel. The model is adaptable for either ice or mechanical refrigeration.

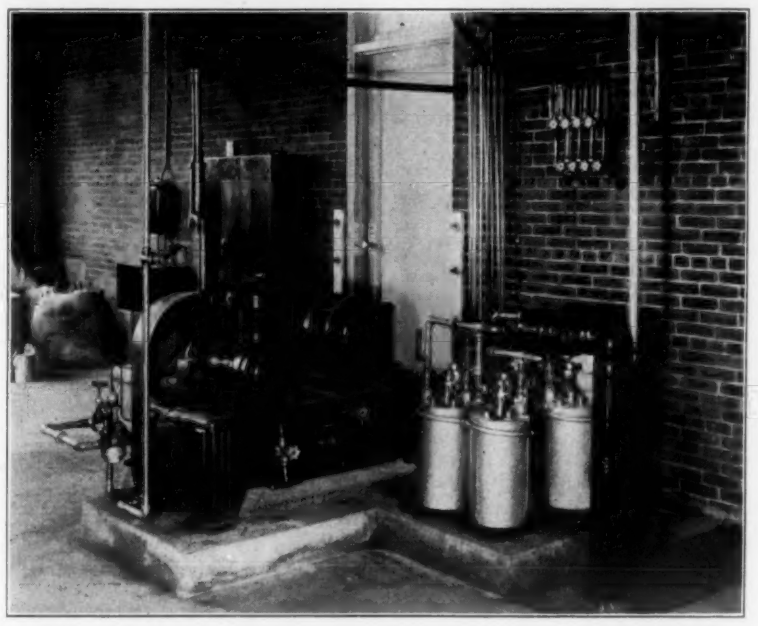
A line of "BR" all-steel tap boxes is also available in four sizes, with from two to five faucets. A faucet for water can be placed between the taps on the BR-2, or in place of any beer faucet on larger boxes.

The "Redwood" line of tap boxes is a combination of natural finish redwood, varnished and waterproofed, with stainless-steel top, splash, and sink. Equipment includes brass chrome-plated faucets, block tin beer coils, ice-box couplings or 3-inch down-draft pre-cooling beer coil entrance. The boxes are available with from two to six taps, beer and water, with half top for under bar use or full top for island installation.

The "Combiner," combination tap box and bottle cooler, is constructed of stainless steel, porcelain, and redwood, in combination, and is adjustable to fit under any bar.

The 30-inch bottle-cooling unit has a minimum capacity of two cases of bottled beer. The model is built in both 30 and 36-inch lengths, for from two to five taps, beer and water. Equipment includes brass chrome-plated faucets, block tin beer coils, 2 inches of Celotex insulation, and ice-box couplings. Either ice or mechanical refrigeration equipment may be used.

Battery of G-E Temprite Units Used to Cool Saratoga Water for Bottling



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SARATOGA, N. Y.—Cooling equipment for bottling mineral waters was one of the refrigeration requirements that had to be met by General Electric Co. in equipping the 10 million dollar buildings recently completed at the elaborate spa here. Temprite water cooling equipment is used throughout the installation.

In a group of buildings adjoining the Geyser Park is a full-sized theater where health authorities lecture, and entertainments are held; and a "drink nail' where the water of the famous mineral springs is available to the public.

Spacious bath houses in another group provide the latest scientific equipment for the treatment of rheumatism, diabetes, heart disease, and other ailments. A complete research memorial laboratory provides a place where specialists may study new methods of treating diseases.

Frank G. Ruso, of A. Wayne Merriam, Inc., General Electric distributor in Schenctady, sold the refrigeration equipment used at the spa, which consists, in part, of a CMF-9L condensing unit with 7½-hp. motor and a CMF-8S with 5-hp. motor, and various types of chilling units to supply the refrigeration for eight walk-in coolers, storage rooms, and freezer.

For the new bottling works where the state-owned mineral waters are bottled, General Electric Temprite cooling equipment was selected by state engineers after tests to check the ability of the metals to resist the corrosive action of the mineral water, G-E officials say.

The water is piped from the springs to this plant and held in tanks for final carbonation, where pressure and temperature equipment take an important part, before passing on to the bottling machine. The constant temperature of the water is maintained at 38° by two Model F-200-CR Temprite coolers, a G-E model CMF-9L condensing unit with a 7½ hp. motor, and three surge tanks which provide a capacity for cooling 300 gals. per hour from 60 to 38°.

Russian Experiments Show Refrigeration Kills Germs

MOSCOW, U.S.S.R.—A few days in a refrigerator to head off a cold or some other disease may be a medical treatment of the future, according to recent experiments by Dr. N. Kalabuchov and Dr. L. Levinson of the Zoological Institute of Moscow University.

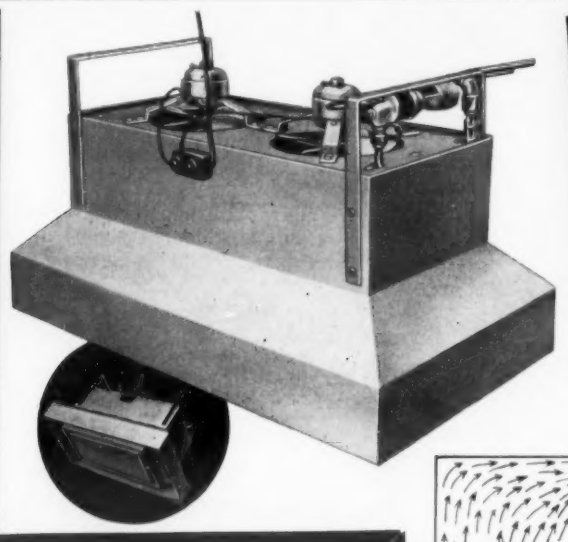
The work was done mainly with bats, who withstand long exposures to cold by slowing down their bodily activity, as do bears or other hibernating animals during their winter sleep.

Selecting two groups of bats, apparently equal in every way, the Russian experimenters injected into one group living germs, related to those of African sleeping sickness, which cause a disease to which the bats are susceptible.

This group of infected bats was kept in cages at ordinary temperatures, as controls. The injected germs multiplied rapidly, and in 13 days all the control animals were dead.

Bats of the other group received similar germ injections, but were put in a refrigerator, at a temperature of 25 to 15° above freezing. Each day the refrigerator was opened, and a small drop of blood taken from each bat, to see whether the injected germs were multiplying.

Instead of doing this, the germs decreased day by day. After eight to 15 days all the germs were gone. The chilled bats were then brought back to normal temperature. None of them developed the disease.



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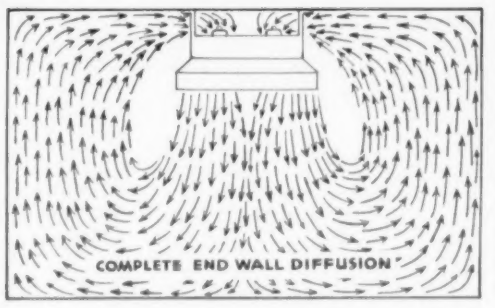

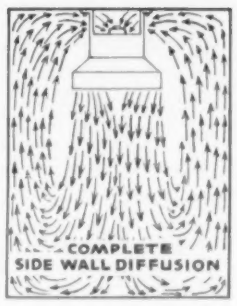

No Stale-Air Pockets. Vert-E-Fex Circulation Reaches All Parts Of Cooler Evenly.

THE
MIGHTY MIDGET

1. Saves two-thirds of space usually occupied by cooling coils and baffles. 2. Provides 4-direction air movement. 3. Flows air gently by means of multiple fans. 4. Duplicates as nearly as possible double coil chamber action. 5. Cools on up-stroke of the air. 6. Maintains correct relative humidity. 7. Reduces operating expense. 8. Does not sweat or drip.

PLUS:

Moisture-proof ball bearing motors; silent fans; fully rust-proof construction; genuine Air-E-Fex coil elements; immaculate white finish.

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H. J. Krackowizer, President
1342 W. Lake Street, Dept. F., Chicago

RACKS KOILS KOOL

ELECTRIC
REFRIGERATION NEWS

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Another Threat of Patent Monopoly Is Banished

AIR-CONDITIONING HISTORY was made when the U. S. Circuit Court of Appeals affirmed the decision of U. S. District Court Judge Alfred Coxe in the case of Auditorium Conditioning Corp. vs. Warner Brothers Pictures, Inc., invalidating the patents owned by Auditorium covering the by-pass system and the use of recirculated air in air-conditioning installations. (See news report in April 22 issue and a complete text of the District Court decision in the April 29 issue of the NEWS.)

With that decision it appears that air conditioning becomes a wide-open industry with all the possibilities for rapid development which are inherent in such a situation. With the threat of monopoly eliminated, it is probable that many new interests will be attracted to the industry.

Disappointing as the decision may be to Inventors Lewis and Fleisher, who probably had visions of a great industry paying tribute to their foresight, it is good news to the industry as a whole. Judging by the development of other industries, which were originally confronted with similar patent situations, we believe that general progress and public interest are best served when inventive genius is given reasonable freedom of movement.

How a Broad Patent May Affect Industry Progress

The elimination of the famous Selden automobile patent marked an important turn in the development of that great industry. If the Selden patent had been upheld by the court, no doubt the progress of the automobile would have been retarded.

The Wolf patent in the electric refrigeration field was of similar character. It was declared invalid by Federal Judge Tuttle at Bay City, Mich., March 23, 1929, and his decree was affirmed by the U. S. Circuit Court in Cincinnati.

Even though that patent was owned by a mammoth corporation (General Motors), well entrenched in the refrigeration business and with ample capital to carry on a large scale market development, it does not seem probable that any *one* company would have provided electric refrigerators of present day quality to so many millions of people, *if the stimulus of competition had been lacking.*

It is conceivable, of course, that if Frigidaire had been free to carry out its program according to a carefully laid plan, without being harassed by aggressive competition, that such a situation might have resulted in a far more orderly and profitable procedure. But it would be hard to believe that seven and one-half million refrigerators would now be in American homes, that the equipment would be so highly perfected, or that the price would be so reasonable. We are much inclined to believe that Frigidaire has sold more units in the face of competition than they would have sold if they had had the field all to themselves.

A Monopoly Permits Calm And Orderly Progress

In support of these views we have only to look at another great industry which has had the opportunity to lay out its program and develop its service in a calm and systematic manner. The Bell Telephone System of the United States is certainly a good example of a well-organized and highly profitable business. With stock rated worthy of the investments of widows and orphans, and with its service highly perfected (judging by all past standards), it seems to stand out as a model of the virtues of monopoly.

Yet we have often wondered how long it would take the Bell Telephone System, if faced by the threat of aggressive competition, to provide the convenient cradle telephone sets for *all* subscribers. It is our guess that some way would quickly be found to eliminate the constant irritation to patrons caused by the suspicion of "long counts" on toll calls and the unchecked tallies of metered local service. We have an idea that the rigid rules limiting the use of convenient accessories and the high rates charged for simple switches, extension bells, and other gadgets, would fall by the wayside in short order under competitive conditions.

True it is that improvements have been made in telephone service. Important technical progress has been made each year. The forward movement is systematic and unhurried. Telephone company executives have time to think and plan ahead. There is no wild scramble each season for something new to get an edge on competition. There is no mad rush in the factory to turn out new models. Advertising and sales promotion departments do not have to work over-time to devise new methods of appealing to prospective customers. Equipment and materials, accounting and training methods, prices for service *and profits*, are all nicely standardized.

Telephone executives have their worries, of course. State public utility commissions must be reckoned with. Unfavorable political activities must be kept in check, and occasionally some irate patron invents a new method of getting even with the telephone company. Even these annoyances have been carefully cataloged and employes are trained to be ready with the proper answer for every complaint.

But the telephone business has long since ceased to be a field for inventive minds and ambitious youth. Hence, it was not telephone men who pioneered and popularized radio. Telephone financiers did, however, take a very active part in coralling the worthwhile patents when they sensed the possibilities of radio competition to their long-distance lines.

Patents Rights May Be Used To Retard Progress

Engineers and attorneys who are intimately acquainted with the intricacies of patent law and procedure frequently make remarks to the effect that the whole patent situation is in a mess. Conditions have also developed which tend to defeat the original plan and purpose of the patent laws. Designed to stimulate creative genius and protect the inventors' rights, it seems that the patent laws may be effectively applied to *retard* progress and create areas of control which are at least questionable in character.

While we claim no expert knowledge of the subject, we have observed several instances affecting important industrial developments where it appears that the principal "invention" of the patentee consists of devising a plan to *control* a budding industry. When it is revealed in court that all of the fundamental elements in a broad patent have been exemplified in prior art of many years standing, it suggests that the "inventor" has been actuated, not by a desire to find a new and better way, but by a desire to control the natural trend of progress and prevent others from accelerating that progress by their contributions.

We invite correction if we are wrong, but it has been our impression for some time, and that impression was formed before the court passed judgment upon the Auditorium patents, that these patents were in the nature of *industry control* inventions rather than substantial contributions to the air-conditioning art.

Letters

Specifications Data Cannot Be Reproduced

C. A. Richards, Inc.
304 E. 45th St.
New York City

Editor:

In the NEWS of April 22, you publish the Grunow specifications. This is, of course, similar to the specification sheet issue by Grunow, but contains one or two items omitted from theirs.

We are their exclusive export distributors, and would like to have your permission to reprint this, giving you credit for it, of course, that we may send it to our clients abroad.

C. A. RICHARDS

Answer: We regret that we cannot grant permission to reprint the specifications which appeared in the April 22 issue of the NEWS. For some of the reasons why we do not feel we should grant permission to reprint the specifications data, see the editorial in the April 15 issue.

We can furnish any reasonable quantity of extra copies of this issue at regular rates. We will also send full information regarding this issue to any list of names which you may furnish.

Ross Roy Comparative Specifications Handbook

Box 245
Yorba Linda, Calif.

Editor:

I have inclosed an order blank and the purchase price for two copies of your household specifications issue. I hope I am not too late.

I have been told to buy a specification manual, called "Ross Roy Spec. Manual," put out by the Ross Roy Co. Would you please give me your honest opinion of this concern and their product? J. E. PARKER

Answer: The "Ross Roy Comparative Handbook" is a study of various makes of refrigerators compared with 1936 Kelvinator models, with the advantages of one model over another (in the opinion of Ross Roy Service) being shown preponderantly in favor of Kelvinator.

While the handbook was obviously prepared for use by the Kelvinator field selling organization, we understand that members of the factory and field organizations must pay the regular price of $3.00 in order to obtain the handbook service.

A Comparative Handbook For Frigidaire Dealers?

The Haskin Information Service
Frederic J. Haskin, Director
Washington, D. C.

Editor:

The local Frigidaire dealer suggested that we write to you for the following information.

Is there a company that publishes a comparison book on refrigerators for Frigidaire dealers such as The Ross Roy Service, Detroit, Michigan, does for Kelvinator dealers?

What is the displacement or capacity of the Frigidaire meter-miser compressor unit and how does it compare per minute, per hour, etc. with Kelvinator and Stewart-Warner compressor displacement?

MRS. O'BRIEN

Answer: In reply to your inquiry of April 30, we do not know of a company that publishes a comparative book on refrigerators for Frigidaire dealers such as the Ross Roy Service does for Kelvinator dealers.

Complete and authoritative specifications data on household electric refrigerators (1936 models) were published in the April 22 issue of ELECTRIC REFRIGERATION NEWS. Publication of this information has been an annual custom for the past several years with the NEWS.

A number of the manufacturers, including Frigidaire, did not include the rated capacity of their units in these specifications because the industry has not yet formally agreed on a standard method for rating refrigerating units used in household electric refrigerators.

Copies of the April 22 issue are available at a cost of 25 cents each.

Are Commercial Machine Ratings Misused?

General Refrigeration Sales Co.
Lipman
Beloit, Wisconsin.

Editor:

Your request for our specifications of commercial machines has just been filled out at the expense of quite a little time spent in converting our standard capacity data to conform to the proposed A. S. R. E. rating.

I think your paper deserves some sort of medal from the refrigeration engineering profession for making it possible for us to check up on our work in comparison with our competitors' units.

I will be sorry you did not ask the manufacturers to furnish compressor displacement, thereby saving quite a little wear and tear on the slide rule, and some of us would have been interested in weights.

Some time ago you ran some very interesting articles on refrigerants and codes, in which there was considerable interest shown between the proponents of various refrigerants. This new proposed code of the A. S. R. E. offers some opportunities for some more of the same kind of debate. The facts are as follows:

The code is based upon refrigeration capacities of a condensing unit operating at liquid temperatures of the refrigerant leaving the receiver valve, which is certainly fair and allows every one to his own ingenuity as to means of keeping this as low as possible. However, it is also based upon the suction vapor entering the compressor at a temperature of 65°, and this is the very interesting and significant part.

Freon-12 is a very heavy vapor, and a large quantity is circulated per ton. Ammonia vapor is a very light vapor, and a small weight is circulated per ton. Methyl chloride and sulphur dioxide are in between.

So, suppose a prospective purchaser of refrigeration is interested in a machine for cooling an ice cream cabinet. He is shown capacities of a line of Freon-12, methyl chloride, and ammonia machines all based upon the new code at a -10° suction temperature. Naturally, he will be interested in the Freon-12 machine until you explain that this capacity is at least twenty five percent more than he can actually get out of the machine, unless he buys a heat interchanger. His next reaction is to find out how much you have to chisel off from the other machines. This will make a nice problem for some of these Refrigeration Schools.

Seriously, I think it is very unfortunate to use such a code which has no value except as a competitive comparison which could not be turned over to the field for application use without making reservations and corrections, and which gives any one refrigerant an unfair advantage over others, with respect to the condensing units. If by the use of a heat interchanger, one refrigerant has a thermodynamic advantage, this is a sales feature of the heat interchanger, and not of the machine.

Years ago, the automotive industry put out a rather meaningless code of engine horsepower ratings which never was a help to the industry or to the consumer, and I believe we should profit by this history and use a rating basis which says to the user an honorable, obtainable fact.

R. H. SWART
Director of Research

Overlooked Patents

M. H. Loughridge
Patent Attorney
342 Madison Avenue
New York City

Editor:

I am bringing to your attention U. S. Patent, 2,037,248, of April 14, 1936, issued to myself with 27 claims relating to Vending Machines.

This patent belong to the class of refrigeration as it is applied to a vending machine for vending soft drinks that are refrigerated by the usual electric water cooler mechanism. The claims also include a simple arrangement that may be applied to water coolers for delivering a measured quantity of the beverage for each operation and in which the liquid is not wasted. The vending machine is of the two stage type in which the first operation delivers a container and the second operation delivers a measured quantity of the beverage.

The reason that I am bringing this patent to your attention is because that in the Patent column of ELECTRIC REFRIGERATION NEWS, you overlooked U. S. Patent 2,035,760, of December 31, 1935, with 31 claims issued to me on a refrigerator.

This patent is interesting because of its substantial claims on cold control, by electric apparatus remotely located. Two stages of control are provided, brought into operation by a push button, with an automatic release to normal conditions after the lower stage has been reached. The patent also contains a novel ventilating system for the evaporator.

M. H. LOUGHRIDGE

Wants Hawaiian Story

Brunner Mfg. Co.
Room 106 Union Station Bldg.
Utica, N. Y.

Editor:

Will you kindly send us extra copies of the March 25 and April 1 issues of ELECTRIC REFRIGERATION NEWS. George Taubeneck's story on the Hawaiian Islands is so interesting that we want to send copies of these two issues on to our representatives for Hawaii.

Enclosed you will find 20 cents in stamps which I assume will cover the cost of these two extra copies.

P. A. KARL
Export Mgr

Sales Kit Not Complete Without Specifications

Perkins Brothers Co.
Longview, Texas

Editor:

Please find enclosed my check for $1.00 covering price of four copies of the April 22 issue.

After using your last year's specifications, I find that my sales kit is not complete without a copy as it gives the most complete information on electric refrigeration I have ever seen. R. L. COMER

Mourners?

Electric Service Co.
Court House Square
Rensselaer, Ind.

Editor:

Send us several copies of your publication, the edition of which lists the refrigerator manufacturers that have gone out of business.

S. P. HILLIARD

Answer: See below.

Michael L. Long
524 Franklin St.
Michigan City, Ind.

Editor:

Can you tell us the number of electric refrigeration manufacturers who have been in business since the inception of the industry and the number that are active at the present time? HAROLD LONG

Answer: See below.

George Patterson, Inc.
Florida Distributor, General Electric
Times Building
St. Petersburg, Fla.

Editor:

Some time ago you published a list of former manufacturers of electric refrigerators who were no longer in business.

We have had several requests for copies of this list, and if it is still available, we would appreciate your sending us 40 or 50 copies.

D. C. LYON
Sales Promotion Division

Answer: See below.

Malone & Moles
Sioux City, Ia.

Editor:

We would like to have as complete a list as possible of the names of electric refrigerators which have been offered on the market during the past five or six years, but which are now discontinued and not being manufactured. E. B. MOLES

Answer: We have published two such lists. The first listing, which gave only the names and addresses of manufacturers who once made electric refrigerators but who are no longer active in this field, was published in the December 28, 1932 issue of ELECTRIC REFRIGERATION NEWS.

The second listing, which was more complete and which gave a brief corporate history of the companies no longer in business, was published in the September 5, 1934 issue of the NEWS.

Companies which are now active in the household electric refrigeration industry may be noted by referring to the April 22, 1936 household refrigerator specifications issue.

Back issues of the News are obtainable at a cost of 10 cents each.

Practice, Not Theory Is Basis of New Bigelow Book

"Planning for More Sales," Vol I. of "The Knack of Selling More" (Three Volumes). Author: Burton Bigelow. Publisher: McGraw-Hill Book Co., Inc., New York City. Pages: 160. Price: $1.50 (set, $4). Review by T. T. Quinn.

First of a series of three companion volumes written by a man who knows the selling business from the ground up, this book is chiefly notable for the fact that it gets away from the theoretical, and presents only field-tested, practical selling ideas.

The word "More" in the title is intended as a challenge to salesmen. No matter how much you know, believes the author, you can know more. You can always sell more, earn more, save more, accomplish more. It is for these "More" men that these volumes were written.

In this first volume, the author begins by attempting to weight up what he calls the "sales load." First and most important question to ask yourself in this respect, he says, is: "Does the purchase of my product or proposition require the prospect to spend money which he had not intended to spend?"

If the answer is "No," the sales load is comparatively less than if the answer is "Yes," he believes.

Generally speaking, the author holds, prospects divide themselves logically into four large groups. The first two groups as those to whom the purchase of your product represents an unexpected expenditure of money. First of these groups is made of thoroughly contented people, satisfied with ther present situation and unreceptive to new ideas. The second group is likewise contented—but not so much so that they can be easily dissatisfied and made to want something better.

Gauging Buying Groups

The third and fourth groups represent those who have already decided to spend money for your type of product. Group 3 are now making their purchases in another way, or through another channel; Group 4 are buying from another source, or of another brand.

Group 1 is most difficult to sell; Group 3 is next; Group 2 is third; and Group 4 is easiest of all to sell.

To more accurately weight up the sales load, the author suggests that the salesman ask himself four questions:

1. How much does the prospect *know* about my product or service?
2. To what extent have the prospect's *wants* for my product or service been developed?
3. When I begin my selling, what is the prospect's *attitude* likely to be?
4. What is the salesman's *task?* How is the prospect's interest to be quickly reached—how can indifference and antagonism be changed to good will and favorable action?

As an example of how these questions work in helping size up prospects, the author cites the case of an imaginary Mrs. Murphy, prospect for an electric refrigerator.

At present, Mrs. Murphy has an old-fashioned icebox, which she uses most of the year with the exception of the coldest months; she has had the icebox for 20 years, and neither she nor Mr. Murphy has any intention at the present time of spending any more for a new electric refrigerator.

Selling "Contented" Prospects

To sell Mrs. Murphy, she must be induced to spend a sum of money which she hadn't intended to spend. She doesn't know much about an electric refrigerator—and probably cares less. She is satisfied with her old icebox, and pretty sure to be closed-minded about a new unit.

Boiled down, Mrs. Murphy is pretty definitely in Group 1—contented. The salesman has a real selling job to do—he must educate Mrs. Murphy to the need of a new refrigerator, arouse her wants, switch her attitude to one of receptivity. She represents the most difficult of all prospects—the uninformed, contented, close-minded type.

Broadly, Group 1 and 2 represent educational selling, or pioneering; Groups 3 and 4 represent competitive selling.

The order, the author reminds, is not the result of one all-inclusive decision made at the time of closing the sale; it is the result of a series of progressive decisions made by the prospect at different stages as the sale moved along. If these decisions—usually eight in number—do not follow each other in step-by-step order, the sale is not getting anywhere, and the salesman must recognize this and take steps to get it into action.

These decisions are:

1—I will *see* this man.
2—I will *listen* to him.
3—I *want* the type of results which he claims from his type of product or service.
4—This is the *brand (or model or number)* I want.
5—This is the *price* I want to pay, and these are the *terms* on which I wish to buy.
6—This is the *firm* I want to buy from.
7—This is the *salesman* I wish to buy from.
8—This is the *time* at which I wish to place the order.

Thinking of the sale as a series of progressive steps breaks down the job of getting the order into a series of intermediate jobs.

Testing Prospect Interest

How is it possible for the salesman to know when the prospect has arrived at one of the eight necessary decisions? Each salesman, says the author must develop his own methods of testing the prospect to determine how far along the sales road he has progressed.

For example, take the job of selling Mrs. Murphy her electric refrigerator:

1. I will see this man.

The salesman gets in, so he knows that decision has been made.

2. I will listen to him.

The prospect listens; no other evidence is needed.

3. I want the type of result which is claimed for this type of product.

"Mrs. Murphy, wouldn't you like to be rid of the inconvenience of waiting for the iceman when he is late in the morning?" or, "Mrs. Murphy, wouldn't you like to have the tasty frozen desserts which a modern electric refrigerator will give you?"

4. This is the brand (or model) which I want to buy.

"Did you ever see a refrigerator that offered you so much for your money, Mrs. Murphy?"

5. This is the price and these are the terms I want to pay.

"It hardly seems possible, does it, that they could make a refrigerator with all these features to sell for only $149.50?"

6. This is the firm I want to buy from.
7. This is the salesman I want to buy from.

These two decisions may be taken for granted if no objection is voiced respecting the firm or the salesman. If there is an objection, it will usually come in the sales conversation.

8. This is the time I wish to place the order.

The test for this decision, of course, is the try for a close. If you have tested your other seven decisions carefully, and you can't get a close, it's a safe bet that the time decision has not been made, the author says. In this case, some salesmen retest all eight decisions by a series of quick questions—a helpful check-up in determining whether the buying decisions have been favorably made as the sale progressed.

What Makes People Buy?

The author devotes a long chapter to "What Makes People Buy?" Speaking broadly, he says, there are but two basic reasons: 1. They wish to escape pain or avoid money loss; 2. They wish to secure pleasure, or gain money or its equivalent. The first point is a minus one; the second a plus one. On a blueprint in the volume, the author traces the whole succession of these plus and minus buying points, and checks the blueprint against several everyday sales situations, to test its practical working accuracy.

An interesting section of the book is devoted to "Taking the Prospect's Measure."

"A man who hasn't the money to buy—and who can't legitimately get it—is not a prospect," writes the author. "Effective salesmen, who guard their time as they do their money, develop effective methods for finding out whether the individual they are calling on is a *prospect* or merely a *suspect*."

Sample of how to qualify prospects for an electric refrigerator is given in the following questions, which one manufacturer recommends:

1. "Have you ever owned or used an electric refrigerator?"
2. "How many members in your family?"
3. "Any children?"
4. "Have you decided how much you wish to pay?"
5. "Do you expect to purchase immediately?"

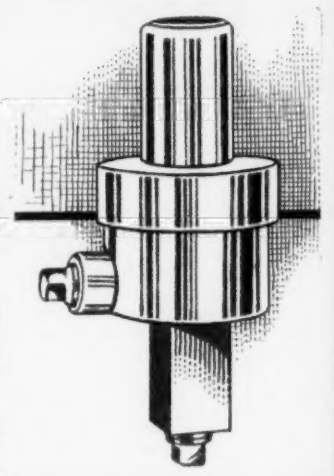
Naturally, the questions are not asked as bluntly as they are stated in the outline. On the foundation of the prospect's replies, the alert salesman can build a story that fits the prospect's need exactly.

On the other hand, the uninformed salesman flounders around, all at sea, knowing little or nothing of the prospect's needs, wants, or desires.

Phil Harrison's Tenth Anniversary

High General Electric officials helped Philip H. Harrison, Newark distributor, celebrate his tenth year in refrigeration. Left to right: P. B. Zimmerman, head of G-E's specialty appliance sales department; Mr. Harrison; O. W. Nelson, toastmaster; and A. W. Lunn.

Meat Cooling and Humidity Control



Although designed for general multiple applications, Temprite 2-Temperature Control Valve is particularly suited to humidity control problems where temperatures must be maintained correctly and constantly.

If you have a temperature control problem which has so far baffled you, try Temprite Model 700, 2-Temperature Suction Pressure Control Valve. You will find it to be the answer.

Write for special folder T-335.

TEMPRITE PRODUCTS CORPORATION
1349 EAST MILWAUKEE AVE. - DETROIT, MICHIGAN
ORIGINATORS OF INSTANTANEOUS LIQUID COOLING DEVICES

GIBSON MAY SPECIAL

One Price from COAST to COAST!

Gibson's Big Special Six
MS-6, Retails at $149.50
with five-year warranty and accessories . . . by all odds the greatest value ever built by GIBSON.

- Full 6-ft. Large Family Size!
- Regular Trade Discount!
- Five Year Warranty!
- Twin Cylinder Hermetically Sealed Unit!
- Nearly 12-ft. Food Storage Area—84 Ice Cubes.
- Basket Drawer—adds a full cubic foot of usable space.
- Large Vegetable Freshener.
- 11 Point Temperature Control.
- Interior Light.

GIBSON MS-6

ACT TODAY Wire or phone your distributor or Gibson Electric Refrigerator Corp. for all details on this May Special Value.

GIBSON ELECTRIC REFRIGERATOR CORPORATION
Greenville, Michigan — Export Sales Office: 201 N. Wells St., Chicago, Ill., U. S. A.

ALSO! THE NEW 6 FOOT KEROUNIT IS READY
KEROSENE BURNING HOME REFRIGERATOR

WARRANTY & REPLACEMENT PLANS IN EFFECT THIS YEAR

GENERAL ELECTRIC
WARRANTY

We warrant, to the original purchaser, the refrigerating equipment sold by us and all parts thereof to be free from defects in material or workmanship under normal use and service. Our obligation under this warranty shall be limited to repairing, or, at our option, to replacing any part of said refrigerating equipment which proves thus defective within one year from date of original delivery and which our examination shall disclose to our satisfaction to be thus defective. This warranty is in lieu of all other warranties express or implied and of all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us any other obligation or liability in connection with the sale of said refrigerating equipment or any part thereof. This warranty will not apply to said refrigerating equipment or any part thereof, which has been subject to any accident, alteration, abuse or misuse.

The term "original purchaser" as used in the foregoing warranty shall be deemed to mean that person, firm, association or corporation to whom the refrigerating equipment referred to therein is originally delivered for use, or the bona fide assignee of that person, firm, association or corporation.

FOUR YEAR REPLACEMENT CONTRACT

(Additional to the One-Year Warranty)

HERMETICALLY SEALED-IN MECHANISM OF GENERAL ELECTRIC DOMESTIC REFRIGERATING MACHINE

.....193..
DATE OF DELIVERY

MACHINE SERIAL NO.....
TYPE.....

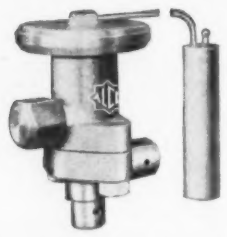
WE AGREE, with the original purchaser of each General Electric domestic type refrigerating machine, who pays Five Dollars for this agreement, to replace the hermetically sealed-in mechanism thereof in which defects in material or workmanship become manifest under normal use and service whereby it fails and cannot be made to operate, and which our examination shall disclose to our satisfaction to be thus defective, our obligation hereunder being limited to replacing such hermetically sealed-in mechanism (or, at our option, to replacing the refrigerating machine with another refrigerating machine of like or similar design and capacity) within four years next following the expiration of one year after date of original delivery, at no additional cost to said purchaser.

This replacement contract applies only to the hermetically sealed-in mechanism and does not apply to any other parts of the refrigerating equipment, such as the refrigerator cabinet, the control, or the porcelain and/or other finishes, nor does it apply to any hermetically sealed-in mechanism which has been subject to accident, alteration, abuse or misuse, nor does this contract apply to service calls and adjustments whereby the refrigerating machine is made to operate, it being distinctly understood that charges may be made therefor. This replacement contract shall apply only within the boundaries of continental United States and Hawaii.

The term "original purchaser" as used herein shall be deemed to mean that person, firm, association or corporation for whom the refrigerating equipment referred to herein is originally installed for use, or the bona fide assignee of that person, firm, association or corporation.

GENERAL ELECTRIC COMPANY
SPECIALTY APPLIANCE DEPARTMENT
Nela Park Cleveland, Ohio

"We're in the Navy Now!"



18 DESTROYERS

are being equipped with

ALCO

Series "T" THERMO VALVES

- Quality of the first degree must be had to meet the rigid Navy specifications.
- Alco Series "T" Thermo Valves were selected as meeting their exacting requirements.
- No better tribute to quality can be had.

For complete details, ask for Bulletin 144-D.

Sold by leading refrigeration supply jobbers

ALCO VALVE COMPANY, INC.
2626 Big Bend Blvd., St. Louis, Mo., U.S.A.
New York Chicago Los Angeles San Francisco

Automatic Refrigeration Control Valves for Air Conditioning and Product Cooling

KELVINATOR
HOUSEHOLD REFRIGERATOR WARRANTY

Model.....
Serial No.....

Warranty No.....
Installation Date.....

We warrant to the original purchaser the refrigerating equipment of the above serial number and all parts thereof to be free from defects in material and workmanship under normal use and service. Our obligation under this warranty shall be limited to repairing or replacing any part of said refrigerating equipment which proves thus defective within one year from date of original installation and which our examination shall disclose to our satisfaction to be thus defective. This warranty is in lieu of all other warranties expressed or implied and of all obligations or liabilities on our part and we neither assume nor authorize any person to assume for us, any other obligation or liability in connection with the sale of said refrigerating equipment or any part thereof. This warranty shall not apply to said refrigerating equipment or any part thereof which has been subject to any accident, alteration, abuse or misuse.

The term "original purchaser," as used in this warranty, shall be deemed to mean that person, firm, association or corporation for whom the refrigerating equipment referred to herein is originally installed.

FOUR YEAR REPLACEMENT CONTRACT

In addition to the above one year warranty on the complete refrigerator, we agree to replace for the original purchaser at any time during the four years next following the expiration of the one year warranty, any defective part of the condensing unit if it is proved to our satisfaction to be inoperative due to defects in factory workmanship or material.

The term "condensing unit" refers to the pressure-imposing mechanism consisting of the motor, compressor, receiver and float valve assembly, condenser and belt. This contract does not apply to any condensing unit which has been subject to accident, abuse or misuse, nor does it provide for adjustments or other attention required by the refrigerator or its mechanism other than replacement of parts or assemblies as provided above. This contract does not apply to the cabinet or any cabinet part or to the finish either porcelain or lacquer, nor does it cover the cooling unit or controls. The contract continues for four years next following the expiration of the one year warranty.

KELVINATOR CORPORATION
Detroit, Michigan

NORGE
TEN-YEAR WARRANTY

We warrant to the original purchaser of every new 1936 NORGE HOUSEHOLD ROLLATOR REFRIGERATOR that the ROLLATOR COMPRESSOR therein is free from defects in material and workmanship under the normal use and service; our obligation under this warranty being limited to exchanging any part or parts for any such NORGE ROLLATOR COMPRESSOR part or parts which may prove thus defective within TEN YEARS from date of delivery to the original purchaser, and which our examination shall disclose to our satisfaction to be thus defective.

FIVE-YEAR WARRANTY

ALSO, WE WARRANT to the original purchaser of every new 1936 NORGE HOUSEHOLD ROLLATOR REFRIGERATOR that the motor, check-valve, fan, fan belt, pulleys, receiver, condenser and freezer needle valve thereof are free from defects in material and workmanship under normal use and service; our obligation under this warranty being limited to exchanging any part or parts for any of the above named part or parts which may prove thus defective within FIVE YEARS from date of delivery to the original purchaser, and which our examination shall disclose to our satisfaction to be thus defective.

ONE-YEAR WARRANTY

ALSO, WE WARRANT to the original purchaser every new 1936 NORGE HOUSEHOLD ROLLATOR REFRIGERATOR to be free from defects in material and workmanship under normal use and service; our obligation under this warranty being limited to repairing or replacing, without any cost to the customer, any defective part or parts within ONE YEAR from date of delivery to the original purchaser of the refrigerator, and which our examination shall disclose to our satisfaction to be thus defective.

AFTER ONE YEAR from the date of delivery to the original purchaser of the refrigerator, a charge may be made for service calls, adjustments, and installation of parts replaced under the above Ten-Year and Five-Year Warranties.

These warranties herein are expressly in lieu of all other warranties, express or implied, and all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us, other liability in connection with the sale of our NORGE Household Rollator Refrigerators.

These warranties will not apply to any refrigerator which has been subject to accident, abuse or misuse.

NORGE DIVISION, Borg-Warner Corporation,
Detroit, Michigan

Name of Norge Dealer..... Name of Original Purchaser.....
Street Address of Original Purchaser..... City..... State.....
Installation Date..... Model No..... Cabinet No..... Chassis No.....
Note—This warranty shall not be in full force and effect until completely filled out and signed by Norge dealer at time of sale and delivery to original purchaser.

GILFILLAN

Date of Retail Sale.....

Ref. Model No.....
Ref. Serial No.....

Warrants to .....
Name Address City State

in addition to the standard one-year warranty on the complete GILFILLAN refrigerator, bearing the above mentioned number, we agree to replace at the factory, to the original purchaser at any time during the four years next following the expiration of the one-year warranty, the whole or any part of the above pictured CONDENSING UNIT in which defects in material or workmanship become manifest under normal use and service and with user's normal responsibility as to the motor*, whereby it fails and cannot be made to operate and which our examination shall disclose to our satisfaction to be thus defective.

This contract does not apply to the refrigerator cabinet, its interior or exterior finish, or any other part of the cabinet whatsoever. This contract does not apply to the evaporator, the thermostat, the expansion valve, or any part of the unit other than the above pictured CONDENSING UNIT. This contract does not apply to such mechanism which has been subject to accident, abuse or misuse, or to any refrigerator that was not properly registered at time of purchase.

In witness whereof, this warranty is endorsed by

GILFILLAN BROS. INC., 1815 VENICE BLVD., LOS ANGELES, CALIFORNIA

*NOTE: User's normal responsibility as to motor is the addition of a few drops of oil (medium automobile oil—not 3-in-1 or sewing machine oil) to each oil cup of the motor twice a year.

72 Cities in March Pass $100,000 Mark In Home Construction

WASHINGTON, D. C.—Wide-spread private residental building operations in March bore out earlier predictions of an anticipated building upswing, reports Stewart McDonald, Federal Housing Administrator.

Seventy-two cities reported one, two, and three family dwelling construction totals of more than $100,000 each during March, a gain of 46 cities over February's total of 26 cities, and a gain of 54 cities over the total for March, 1935.

Even in the face of unseasonable cold weather in February, reports show the 26 cities represent a gain of 16 cities over February of 1935.

All-Time High Reached

These buildings figures, Mr. McDonald says, coincide with the volume of mortgages insured under the terms of the National Housing Act by FHA.

An all-time high for the number and dollar volume of mortgages selected for appraisal was reached the week ending April 18, with 2,383 mortgages amounting to $9,661,339, the administrator reports. Figures for the previous week, also a brief all-time high, were 2,302 mortgages amounting to $9,039,791.

California shows the largest residental gains, with 17 of its cities enrolled in the group having $100,000 or more in new residential building, according to the report of the Bureau of Statistics. In February, it had only nine cities in that group; in February, 1935, two; and in March, 1935, five.

Four Cities Over Million

Texas and Ohio put four cities into the $100,000 residential building total class in March, as opposed to the two both states had in February. In February and March, 1935, Texas had only two cities in that group and Ohio only one, reports show.

Although Los Angeles was alone in February of this year with residential building in excess of a million dollars, four cities reported building over that mark in March, three of them in excess of two million dollars. New York, Detroit, and Los Angeles, in the order named, reported residential building well over two million dollars each. Philadephia was fourth with $1,064,180.

Kelvinator March Payroll 74% Over March, 1935

DETROIT—An increase of 74.3% in Kelvinator Corp.'s factory payroll for March, compared with that for the same month in 1935, reflects increasing consumer purchasing power and generally improved business conditions, declares George W. Mason, president of Kelvinator Corp.

For the six months ending March 31, 1936, total factory payroll rose 22.3% over the figure for the corresponding six-month period in 1935.

FRIGIDAIRE
5-YEAR PROTECTION PLAN
On Frigidaire Sealed-In Mechanical Unit

FIVE-YEAR PROTECTION PLAN —We Warrant every new 1936 Frigidaire Household Sealed-In Mechanical Unit to be free from defects in material and workmanship under normal use and service, and we will, within five years from date of delivery to the original purchaser, replace without any cost to the customer, any Sealed-In Mechanical Unit which our examination shall disclose to our satisfaction to be thus defective, provided, however, that by so doing we shall not be obligated to replace the complete refrigerator. The foregoing applies only to the Sealed-In Mechanical Unit under conditions specified herein, and does not apply to any other parts of the Frigidaire equipment mentioned hereinafter.

ONE-YEAR WARRANTY

ONE-YEAR WARRANTY — We Warrant every new 1936 Frigidaire Household Cabinet, temperature control, fan, and starting relay to be free from defects in material and workmanship under normal use and service, and we will, within one year from delivery to the original purchaser, replace without any cost to the customer, any part or portion thereof which our examination shall disclose to our satisfaction to be thus defective. After one year from date of delivery to the original purchaser a charge will be made for any adjustments or service calls (other than for the replacement of the Sealed-In Mechanical Unit as stated herein above), whereby the Frigidaire is made to operate satisfactorily, and for any repairs to the cabinet, its finish, the temperature control, the fan, or the starting relay.

This warranty does not apply to any material which has been subject to misuse, neglect, alteration or accident; is subject to conditions set forth as User's Normal Responsibility on the reverse side hereof; is in lieu of all other warranties expressed or implied, and we do not authorize any person or representative to assume for us any other liability in connection with our products.

Removal of original serial numbers from mechanism or cabinet voids this warranty in its entirety.

USER'S NORMAL RESPONSIBILITY

The following items, since they are not manufacturing defects, are not included in the warranty, but are the responsibility of the User:

1—User's accidehtal damage to interior or exterior finish.

2—Accidental breaking of glass drip tray in models so equipped.

3—Replacement of light bulb inside of cabinet in models so equipped.

4—Defrosting the freezer. Use Defrosting Switch. See instructions.

5—In case temperature adjustments are necessary due to extreme or varying climatic conditions, use the Cold Control according to instructions.

6—Excess storage of food in cabinet obstructing circulation and necessitating readjustments in temperature to meet unusual demand. See instructions.

7—Blown fuses on house wiring circuit stopping refrigerator.

Service calls, other than those covered by conditions specified in this warranty as our responsibility, will be made at the expense of the user.

Call only the authorized Frigidaire Service Dealer or Service Station for information and service on this unit. Have serviceman show his up-to-date identification card.

FRIGIDAIRE DIVISION, General Motors Corporation
Dayton, Ohio

Cabinet 1936 Serial No..... Mechanical Unit 1936 Serial No.....

WESTINGHOUSE
HOUSEHOLD REFRIGERATOR WARRANTY
CABINET SERIAL NO.:

We warrant to the original purchaser the refrigerating equipment sold by us and all parts thereof to be free from defects in material or workmanship under normal use and service. Our obligation under this warranty shall be limited to repairing or replacing any part of said refrigerating equipment which proves thus defective within one year from date of original installation, and which our examination shall disclose to our satisfaction to be thus defective. This warranty is in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and we neither assume, nor authorize any other person to assume for us, any other obligation or liability in connection with the sale of said refrigerating equipment or any part thereof. This warranty will not apply to said refrigerating equipment or any part thereof which has been subject to any accident, abuse or misuse.

The term "original purchaser" as used in this warranty shall be deemed to mean that person, firm, association or corporation for whom the refrigerating equipment referred to herein is originally installed.

FOUR YEAR UNIT REPLACEMENT CONTRACT

In addition to the above one-year warranty on the complete refrigerator, we agree to replace to the original purchaser at any time during the four years next following the expiration of the one-year warranty, the hermetically sealed-in mechanism if it is proved to our satisfaction to be inoperative due to defects in factory workmanship or material.

This contract does not apply to the cabinet, its finish, or any part of the cabinet whatsoever. Nor does it apply to the control, the fan, or any part of the unit other than the hermetically sealed-in mechanism. This contract does not apply to any sealed-in mechanism which has been subjected to accident, abuse or misuse, nor does it provide for adjustments or other attention required by the refrigerator or its mechanism other than complete unit replacement as provided for above.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
Mansfield, Ohio

Form 17210F Every House Needs Westinghouse Printed in U.S.A.

APEX
WARRANTY
Household Refrigerator

Model No. ..... Installation Date .....
Serial No. ..... Warranty No. .....

We warrant each new 1936 model "APEX" electric refrigerator to be free from defect in material or workmanship under normal use and service, and we will within one year from delivery to the original purchaser repair or at our option, replace free of charge any part or parts proving thus defective.

This warranty does not apply in case of the employment of unauthorized service; or deviations from the published instructions on the use of any model, or purchase at other than established retail price authorized by this company or its subsidiaries.

This warranty is in lieu of all other warranties, expressed or implied, and we do not authorize any person or representative to assume for us any other liabilities in connection with electric refrigerators built by APEX.

FOUR-YEAR UNIT REPLACEMENT CONTRACT

In addition to the above One Year Warranty on the complete refrigerator we agree, upon the receipt of application form properly executed and the payment of the amount therein required, to replace for the original purchaser at any time during the four years next following the expiration of the One Year Warranty, any defective part of the CONDENSING UNIT if it is proved to our satisfaction to be inoperative due to defects in factory workmanship or material.

The term "CONDENSING UNIT" refers to the pressure imposing mechanism consisting of the motor, compressor, base, mounting springs, pulleys, liquid receiver, condenser and belt. This contract does not apply to the cabinet whatsoever, nor does it cover the cooling unit or controls. Neither does this contract apply to any condensing unit which has been subject to accident, abuse or misuse, nor does it provide for adjustments due to excessive noise or other attention required by the refrigerator or its mechanism other than the replacement of parts provided for above.

THE APEX ELECTRICAL MANUFACTURING COMPANY
Refrigeration Division *Cleveland, Ohio*

GRUNOW
WARRANTY

"GENERAL HOUSEHOLD UTILITIES COMPANY warrants to the original purchaser, the refrigerating equipment sold by it and all parts thereof, to be free from defects in material and workmanship under normal use and service. General Household Utilities Company's obligation under this warranty shall be limited to repairing or replacing, at the factory, any part of said refrigerating equipment which proves thus defective within one year from the date of installation and which General Household Utilities Company's examination shall disclose to its satisfaction to be thus defective. The warranty is in lieu of all other warranties expressed or implied and all other obligations or liabilities on the part of General Household Utilities Company and it neither assumes nor authorizes any other person to assume for it any other obligation or liability in connection with the sale of said refrigerating equipment or any part thereof. This warranty will not apply to said refrigerating equipment or any part thereof which has been subject to any accident, alteration, abuse or misuse."

Non-Transferable

FOUR YEAR REPLACEMENT CONTRACT

Factory Contract No..... Ref. Model No.....
Date of Retail Sale..... Ref. Unit Serial No.....
Ref. Cabinet Serial No.....

Issued to .....
Name Address City State

In addition to the standard one-year warranty on the complete GRUNOW refrigerator, bearing the above mentioned numbers, we agree to replace at the factory, to the original purchaser at any time during the four years next following the expiration of the one-year warranty, the whole or any part of the SEALED-IN MECHANISM in which defects in material or workmanship become manifest, under normal use and service, whereby it fails and cannot be made to operate and which our examination shall disclose to our satisfaction to be thus defective.

This contract does not apply to the refrigerator cabinet, its interior or exterior finish, or any other part of the cabinet whatsoever. This contract does not apply to the fan, the electrical control, the evaporator, the thermostat, or any part of the unit other than the SEALED-IN MECHANISM. This contract does not apply to such mechanism which has been subject to accident, abuse or misuse.

GENERAL HOUSEHOLD UTILITIES CO.
Chicago, Illinois

Signed.....
Secretary.

LEONARD
HOUSEHOLD REFRIGERATOR WARRANTY

Model..... Warranty No.....
Serial No..... Installation Date.....

We warrant to the original purchaser the refrigerating equipment of the above serial number and all parts thereof to be free from defects in material and workmanship under normal use and service. Our obligation under this warranty shall be limited to repairing or replacing any part of said refrigerating equipment which proves thus defective within one year from date of original installation and which our examination shall disclose to our satisfaction to be thus defective. This warranty is in lieu of all other warranties expressed or implied and of all obligations or liability in connection with the sale of said refrigerating equipment or any part thereof. This warranty shall not apply to said refrigerating equipment or any part thereof which has been subject to any accident, alteration, abuse or misuse.

The term "original purchaser," as used in this warranty, shall be deemed to mean that person, firm, association or corporation for whom the refrigerating equipment referred to herein is originally installed.

FOUR YEAR REPLACEMENT CONTRACT

In addition to the above one year warranty on the complete refrigerator, we agree to replace for the original purchaser at any time during the four years next following the expiration of the one year warranty, any defective part of the condensing unit if it is proved to our satisfaction to be inoperative due to defects in factory workmanship or material.

The term "condensing unit" refers to the pressure imposing mechanism consisting of the motor, compressor, receiver and float valve assembly, condenser and belt. This contract does not apply to any condensing unit which has been subject to accident, abuse or misuse, nor does it provide for adjustments or other attention required by the refrigerator or its mechanism other than replacement of parts or assemblies as provided above. This contract does not apply to the cabinet or any cabinet part or to the finish either porcelain or lacquer, nor does it cover the cooling unit or controls. The contract continues for four years next following the expiration of the one year warranty.

LEONARD REFRIGERATOR COMPANY
Detroit, Michigan

World Radio Gives Free Gift to Get Names

BOSTON—Offering a free gift as the central feature of a direct mail promotion to get new prospect names proved a highly successful and relatively inexpensive early-spring sales-building activity for the World Radio Corp., electric refrigerator dealer in this city.

The company sent to each person on its mailing list a business reply folder which stated that the recipient could obtain, free of charge, a green glass pitcher (8½ inches high), by writing the names and addresses of four friends, relatives, or neighbors who did not have electric refrigerators in their homes, on the space provided on the opposite side of the folder, and mailing it to the company.

To attract the attention of the person who received it, the words "Free Gift To" were printed in large black type on the side of the card on which his name and address were written. An enlarged, green inked reproduction of the pitcher was printed on the inside of the folder.

AIR-RITE
DEODORIZER
for refrigerators

Keeps refrigerators sweet. Suspend from any shelf. Attractive finish. Size 2½"x3½". To retail for $1. Write for literature and prices.
Address Box 35, Fairview Station.

Walway Co.
DETROIT MICHIGAN

THE MASTERCRAFT
ADJUSTABLE PAD AND CARRYING HARNESS
FOR SAFE DELIVERY OF AUTOMATIC REFRIGERATORS

Pad and harness adjustable to many sizes and styles of cabinets. Economical—Efficient. Sturdily constructed, easily applied. Name of refrigerator attractively lettered on pad without charge.

Pad (Adjustable) $9.50 ea.
Harness (Adjustable) $6.00 ea.
Illustration at left shows type F adjustable harness and adjustable pad.
For other types, also individual carrying straps, write for full information.

BEARSE MANUFACTURING CO.
3815-3825 Cortland Street, Chicago, Illinois

"GENUINE DETROIT"
HEATING, REFRIGERATING AND AIR CONDITIONING CONTROLS
DETROIT LUBRICATOR COMPANY
DETROIT, MICHIGAN, U.S.A.
Canadian Representative—RAILWAY AND ENGINEERING SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg

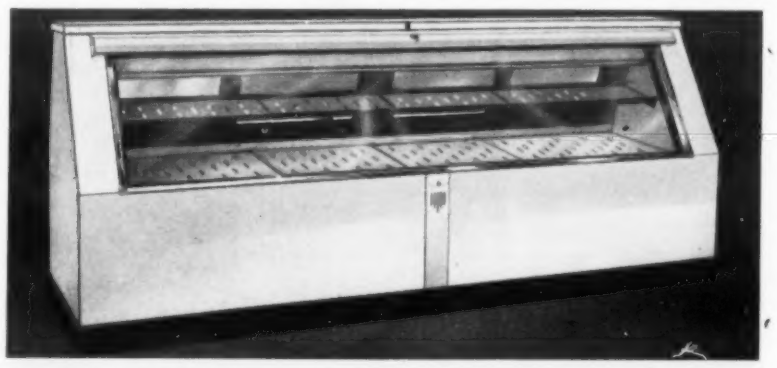
HERE'S WHY MAKERS OF POPULAR DISPLAY CASES *choose Armstrong's* LK CORKBOARD

"Most nearly perfect of any insulating material," says A. L. GOETZMAN, manager of PUFFER-HUBBARD MFG. CO., who use LK Corkboard exclusively.

ALL insulating materials have some good points. Armstrong's LK Corkboard has them *all*. A low conductivity, light weight insulation developed especially to meet the requirements of refrigerated equipment, this pure corkboard insures permanently efficient operating *performance* . . . lasting customer *satisfaction*. It is moisture-resistant, rigid, will not settle and pack. And because it is furnished in large sized boards, Armstrong's Corkboard permits quick and economical installation.

Write today for samples and data on Armstrong's LK Corkboard—also Armstrong's Standard Corkboard and Cork Covering for cold rooms and cold lines. Armstrong Cork Products Co., Building Materials Division, 924 Concord Street, Lancaster, Pennsylvania.

For Refrigeration Contractors
For speedy delivery to refrigeration contractors, stocks of Armstrong's Standard Corkboard are conveniently located in principal cities. These branch warehouses can also supply the complete line of Armstrong's sundries—the result of years of experience in the most efficient methods of installing corkboard.



PUFFER-HUBBARD 10-FT. DISPLAY CASE. *One of the many attractive models of commercial refrigerated equipment made by this well-known Minneapolis manufacturer all insulated with Armstrong's LK Corkboard.*

COLDSPOT

5-YEAR PROTECTION PLAN

—We guarantee, to the original purchaser, every new 1936 Coldspot electric Roto-Rite mechanical unit to be free from defects in material and workmanship under normal use and service. We will, within five years from date of installation, repair, or replace with comparable equipment, without any cost to the customer, any Roto-Rite mechanical unit which our examination shall disclose to our satisfaction to be thus defective, provided, however, that by so doing we shall not be obligated to replace the complete refrigerator. The foregoing applies only to the sealed system (consisting of the compressor, condenser, receiver, expansion valve, evaporator, and connecting tubing) and motor, under conditions specified herein, and does not apply to any other parts of the Coldspot Refrigerator, which are covered by the One Year Guarantee.

ONE-YEAR GUARANTEE

ONE YEAR GUARANTEE—We guarantee, to the original purchaser, every new 1936 Coldspot electric refrigerator to be free from defects in material and workmanship under normal use and service. We will, within one year from date of installation, repair, or replace with comparable equipment, without any cost to the customer, any part of the Roto-Rite unit and cabinet which our examination shall disclose to our satisfaction to be thus defective.

This guarantee and protection shall not apply to any part of the refrigerator which has been subject to accident, alteration, abuse, or misuse. Our obligation to render free service under this contract shall be limited to the repair or replacement of such defective parts as specified above. Otherwise, a nominal charge will be made for service resulting from ordinary use, accident, alteration, abuse, or misuse. We shall not be obligated to render free service for the items described as "normal responsibility of the user" on the reverse side hereof.

This guarantee is in lieu of all other guarantees or promises expressed or implied; and we do not authorize any person or representative to assume for us any other liability in connection with the sale of the 1936 Coldspot electric refrigerator.

NORMAL RESPONSIBILITY OF THE USER

The following items, since they are not manufacturing defects, are not included in the Guarantee and Protection Plan, but are the responsibility of the user:

(1) User's accidental damage to interior or exterior finish.

(2) User's accidental breakage of glassware accessories.

(3) Replacement of light bulb.

(4) Care of the refrigerator—defrosting, oiling, cleaning. (See Operating Suggestions booklet.)

(5) Use of the refrigerator—maintaining proper temperature by use of the Cold Control, arrangement of food on the shelves for proper air circulation, and observing reasonable limits in amount of food stored. (See Operating Suggestions and Recipe booklets.)

(6) Defects or blown fuses in house wiring circuits which stop the refrigerator.

Only stores authorized to sell Coldspot refrigerators, or their service departments, may fulfill the terms of the guarantee.

SEARS, ROEBUCK AND CO.

Certificate No. ..... Issued To..... Address.....

City..... State..... Date Installed..... Store.....

Model No. ..... Serial No. Unit..... Serial No. Cabinet.....

To The Customer: Be sure the above record is completely and properly filled out so that you are fully protected under this plan.

HIGHEST Filtrine EFFICIENCY

WATER COOLERS

COMMERCIAL — AIR CONDITIONING

From 2 gals. per hour to 500 gals. per minute

SURGE TANKS — STEEL PIPE COILS

FILTRINE MFG. CO., Brooklyn, N. Y.

The very best refrigerant

V-METH-L VIRGINIA SMELTING

(Virginia Methyl Chloride)

for

medium sized COMMERCIAL REFRIGERATION installations

Experience has proved the superiority of methyl chloride as the best refrigerant for medium sized commercial refrigeration installations. Experience also proves V-METH-L (Virginia Methyl Chloride) is unequalled because of its: 1. Low boiling point: —10.6° F. 2. Freedom from moisture and acidity. 3. Uniform quality. 4. Economy—permits use of flange-jointed copper tubing and avoids the cost of welded steel. 5. Prompt delivery to you—from 69 shipping points spotted strategically over the country.

EXTRA DRY ESOTOO (Liquid Sulphur Dioxide) made with the same accuracy and precision, shipped from the same 69 shipping points.

VIRGINIA SMELTING COMPANY

WEST NORFOLK :: VIRGINIA

MAIL THIS COUPON NOW!

F. A. Eustis, Sec'y, Virginia Smelting Co., 131 State St., Boston, Mass.

Send me the literature I have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time.

☐ Folder: Extra Dry ESOTOO (Liquid Sulphur Dioxide) E-31-36
☐ Folder: V-METH-L (Virginia Methyl Chloride)
☐ Folder: Transferring from large to small cylinders
☐ Circular: Physical properties of various refrigerants

Name.....

Street and No.....

City and State.....

MONTGOMERY WARD

FIVE YEAR PROTECTION PLAN

FIVE-YEAR PROTECTIVE PLAN. We warrant every Montgomery Ward Electric Refrigerating Mechanism as hereinafter defined to be free from defects in material and workmanship under normal use and service. We will, within five years from date of delivery to original purchaser, repair or replace, without any cost to the customer, any part of the Refrigerating Mechanism which our examination shall disclose to our satisfaction to be thus defective. The foregoing applies only, under the conditions specified herein, to the Refrigerating Mechanism, which consists of the pressure imposing unit, freezing unit, motor, belt, pulleys, condenser, receiver, and float valve, and does not apply to any other parts of the Ward Refrigerator or to the complete refrigerator, which are covered by the One-Year Warranty.

ONE-YEAR WARRANTY

ONE-YEAR WARRANTY. We warrant every Ward Electric Refrigerator to be free from defects in material and workmanship under normal use and service and we will, within one year from date of delivery to original purchaser, repair or replace, without any cost to the customer, any part or portion thereof which our examination shall disclose to our satisfaction to be thus defective. After one year from date of delivery to original purchaser, adjustment or service calls and repairs or replacements other than the repair or replacement of any part or parts of the Refrigerating Mechanism as stated above will be made at the expense of the user.

The Protection Plan and Warranty are subject to conditions relating to the "Normal Responsibility of the User" set forth on the reverse side hereof and do not apply to any part or parts which have been subject to misuse, neglect, alteration or accident. The obligations herein assumed by us are in lieu of all other warranties, guarantees of liabilities, expressed or implied, and we do not authorize any person or representative to assume for us any other obligation or liability than herein expressly stated.

Serial Numbers { Refrigerating Mechanism..... Cabinet.....

Installation Date.....

MONTGOMERY WARD & CO.

NORMAL RESPONSIBILITY OF THE USER

The manufacturers of Ward Electric Refrigerators have been carefully selected from the leaders in the field of mechanical refrigeration. Combined they have experience and facilities unexcelled in the industry.

The following items are not manufacturing defects and are accordingly not included in the Warranty and Five-Year Protection Plan but are the responsibility of the user:

1. User's accidental damage to interior or exterior finish.
2. Accidental breakage of fixtures on the interior, including defrost trays, hydrated chests, light bulbs, etc.
3. Adjustment of controls due to climatic conditions or elevation.
4. Overloading to a point of restriction of air circulation.
5. Resetting of motor protector switch. The "ON" and "OFF" switch on your Ward Refrigerator is also a sensitive motor protector switch. In case it releases due to a temporary low voltage fluctuation or low current supply simply reset it to the "ON" position.
6. The blowing of fuses in household wiring.
7. Care of the refrigerator—Defrosting, oiling, cleaning. (See instructions.)

Only those authorized to sell or service Ward Electric Refrigerators may fulfill the terms of the Ward Warranty and Five-Year Protection Plan.

LANDERS, FRARY & CLARK

WARRANTY

WE WARRANT to the original purchaser the refrigerating equipment sold by us and all parts thereof to be free from defects in material or workmanship under normal use and service. Our obligation under this warranty shall be limited to replacing any part of said refrigerating equipment which proves thus defective within one year from date of original installation, and which our examination shall disclose to our satisfaction to be thus defective. This warranty is in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and we neither assume, nor authorize any other person to assume for us, any other obligation or liability in connection with the sale of said refrigerating equipment or any part thereof. This warranty will not apply to said refrigerating equipment or any part thereof which has been subject to any accident, alteration, or misuse.

The term "original purchaser" as used in this warranty shall be deemed to mean that person, firm, association or corporation for whom the refrigerating equipment referred to therein is originally installed.

The obligation of this warranty in replacing any or all parts thereof shall be limited to replacement F.O.B. Factory, New Britain, Connecticut.

UNIVERSAL ELECTRIC REFRIGERATOR

FOUR-YEAR REPLACEMENT CONTRACT

(Additional to the Standard One-Year Warranty)

In addition to the regular one year warranty covering the UNIVERSAL Electric Refrigerator, we agree to replace for the original purchaser at any time during the four years next following the expiration of the one year warranty, any defective mechanical part of the condensing unit if it is proved to our satisfaction to be inoperative due to defects in factory workmanship or materials.

The mechanical parts of the condensing unit include the following parts: Motor, Compressor, Receiver and Condenser. This contract does not apply to the cabinet or any cabinet part or to the finish, either porcelain or lacquer, nor does it cover the cooling unit, controls, belt, float valve assembly, or accessories.

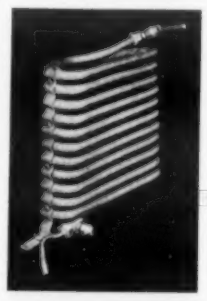
This contract does not apply to any mechanical part of the condensing unit which has been subjected to accident, abuse or misuse, nor does it provide for adjustments or other attention required by the Refrigerator or its mechanism other than replacement of parts or assemblies as provided above.

This contract continues for four years next following the expiration of the regular one year warranty.

This contract shall apply only within the boundaries of the United States.

LANDERS, FRARY & CLARK

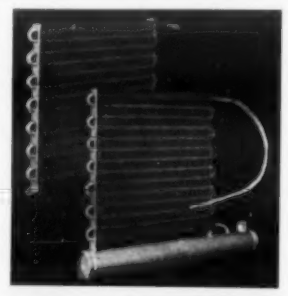
New Britain, Connecticut, U. S. A.



KRAMER

air and water cooled

CONDENSERS



Built to that standard of quality so evident in all KRAMER REFRIGERATION PRODUCTS. Headquarters for 1 or 100,000 to stock or your specifications. Detailed description Pages 40 and 41 in KRAMER CATALOG No. 336. Do you have a copy?

TRENTON AUTO RADIATOR WORKS

Main Offices and Factory, TRENTON, NEW JERSEY

NEW YORK: 210-212 West 65th Street PITTSBURGH: 5114 Liberty Avenue

Merchants Ask Action Be Deferred on New Basing Point Laws

NEW YORK CITY—A recommendation that action by Congress on all price discrimination bills, "basing point" bills, and bills to increase the powers of the Federal Trade Commission be deferred pending a comprehensive re-examination of the anti-trust laws and the Federal Trade Commission Act, to be undertaken by the Administration elected next November, is contained in a report of the committee on Federal Trade Commission and anti-trust laws of The Merchants' Association of New York.

The Association's report follows:

"Numerous bills are now receiving serious consideration in Congress which would extend the provisions of the anti-trust laws and the Federal Trade Commission Act to thousands of transactions that for years have been a daily occurrence in scores of industries, and heretofore have never been within the scope of these statues.

"These bills fall into several categories:

"Price discrimination bills, illustrated by the Robinson Bill, S. 3154, which was favorably reported to the Senate on Feb. 3, 1936, by the Senate Committee on Judiciary; the Patman Bill, H. R. 8442; the Utterback Bill, H. R. 10486; and the Copeland Bill, S. 4024. With varying degrees of severity, each of these bills brings within the prohibition of the anti-trust laws many practices that for generations have been routine procedure in scores of industries.

Would Disturb Present Systems

"Basing point bills, illustrated by the Wheeler Bill, S. 4055, and the Utterback Bill, H. R. 11329, which would bring within the prohibition of the anti-trust laws 'basing point' and 'delivered price' systems that are now fundamental in dozens of businesses.

"Bills to increase the powers of the Federal Trade Commission, illustrated by the Wheeler Bill, S. 3744, and the Rayburn Bill, H. R. 10385. These bills would extend the jurisdiction of the Federal Trade Commission beyond unfair methods of competition in interstate commerce, and would include all unfair and deceptive cats and practices in interstate commerce, and would remove many of the limitations which the Federal Trade Commission Act now imposes upon the Commission's exercise of its investigatorial powers.

"Bills to license corporations engaged in interstate commerce, illustrated by the Borah Bill, S. 579, and the O'Mahoney Bill, S. 3363. By requiring all corporations engaged in interstate commerce to procure licenses from the Federal Trade Commission, these bills would open the door to drastic federal regulation of each and every corporation doing any business of any kind across state lines.

Regimentation Seen

"If all these bills were enacted into law, the result would be the complete governmental regimentation of all business of more than purely local character.

"This may not be a conclusive reason for holding that all these bills are bad, but it is a sufficient reason for withholding judgment upon them until it is ascertained whether the abuses in the few industries that have prompted these bills may not be corrected by something short of the governmental regimentation of business which the enactment of these bills would bring about, not merely in these particular industries but also in all other industries in which no such abuses exist, and where there has been no demand for legislation of this character.

"Whatever be the merits or defects of these bills, the earnestness with which their sponsors are pressing them upon Congress, and the equal earnestness with which their opponents are resisting them, suggest this conclusion:

Anti-Trust Law Antiquated?

"Ever since NRA collapsed, there has been throughout industry a widespread feeling, shared by thousands of business men who are taking no part either in sponsoring or in opposing these bills, that there should be a comprehensive re-examination of the anti-trust laws and the Federal Trade Commission Act.

"This same dissatisfaction with the present scope of the anti-trust laws and the Federal Trade Commission Act is the moving cause for each of the legislative proposals contained in all these various bills.

"Whatever be the administration that will be elected to office at the national election this Fall, it is certain that one of its major jobs will surely be to join with Congress in a comprehensive re-examination of the anti-trust laws and the Federal Trade Commission Act, and in the formulation of whatever legislative program may then be called for in the light of such re-examination."

FAIRBANKS-MORSE

TERMS OF STANDARD ONE-YEAR WARRANTY

The Corporation warrants to the original purchaser the refrigeration equipment sold by it and all parts thereof to be free from defects in material or workmanship under normal use and service. The Corporation's obligation under this warranty shall be limited to repairing or replacing any part of said refrigeration equipment, which the Corporation's examination shall disclose to its satisfaction to be thus defective within one (1) year from date of original installation, except as may be indicated in explanations or interpretations that accompany this warranty. This warranty is in lieu of all other warranties expressed or implied and of all other obligations or liabilities on the part of the Corporation, and it neither assumes nor authorizes any other person to assume for it any other obligation or liability in connection with the sale of said refrigeration equipment or any part thereof. This warranty will not apply to said refrigeration equipment or any part therof which has been subject to any accident, alteration, abuse or misuse.

"Corporation," as used in the foregoing warranty, shall be deemed to mean Fairbanks, Morse & Co., Home Appliance Division, Indianapolis, Indiana.

Corporation reserves the right to discontinue any model or to revise, change or modify the construction of refrigeration equipment, or any part thereof as it may see fit without incurring any obligation to install same on refrigeration equipment previously sold by Corporation.

Parts not warranted include belts, ice trays, electric light bulbs, porcelain (except as examination may prove it defective) and external or internal finish (except as examination may prove it defective). Also the charge of refrigerant and oil is not warranted either as to loss or damage resulting from the loss.

Motors are *not warranted* by the Corporation. Arrangements have been made with Wagner Electric Corp. to assume the warranty and service on motors through their established service branches.

FOUR-YEAR PROTECTION PLAN CONTRACT

(Additional to Standard One-Year Warranty)

Pressure-Imposing Mechanism of Fairbanks-Morse Conservador Refrigerator

Refrigerator Model..... Contract Number.....
Unit Serial Number.....
Cabinet Serial Number..... Date of Retail Sale.....

In addition to the Standard One-Year Warranty on the complete Fairbanks-Morse refrigerator, bearing the above mentioned numbers, we agree to replace at the factory, to the original purchaser who pay five dollars ($5.00) for this agreement, at any time during the four years next following the expiration of the one-year warranty, any part of the pressure imposing mechanism in which defects in material or workmanship become manifest, under normal use and service, whereby it fails and cannot be made to operate and which our examination shall disclose to our satisfaction to be thus be defective, our obligation hereunder being limited to replacing such parts (or, at our option, to replacing them with other parts of like or similar design and capacity).

This Protection Plan applies only to the pressure imposing mechanism and does not apply to any other parts of the refrigerating equipment, such as the refrigerator cabinet, its interior or exterior finish, or any part of the cabinet whatsoever; nor does it apply to the controls or the cooling unit; nor does it apply to any pressure imposing mechanism which has been subject to accident, alteration, abuse or misuse; nor does it apply to wear, tear and gradual deterioration and depreciation; nor does this Protection Plan apply to service calls and adjustments or other attention required by the refrigerator or its mechanism whereby the refrigerating machine is made to operate; nor does it apply to service to correct noise. All our liability hereunder is strictly limited to replacing parts of the pressure imposing mechanism as provided above. This Protection Plan shall apply only within the boundaries of Continental United States.

The term "Pressure Imposing Mechanism" refers only to the motor, compressor, receiver, expansion valve, condenser and belt.

The term "Original Purchaser" as used herein shall be deemed to mean that Person, Firm, Association, or Corporation for which the refrigerating equipment referred to herein is originally installed for use.

FAIRBANKS, MORSE & CO.
Home Appliance Division
Indianapolis, Indiana, U. S. A.

O'KEEFE & MERRITT

ONE YEAR WARRANTY

We warrant every new 1936 O'Keefe & Merritt household cabinet, temperature control, fan and mechanical unit to be free from defects in material and workmanship under normal use and service, and we will, within one year from delivery to the original purchaser, wherever O'Keefe & Merritt factory service representatives are maintained, replace without any cost to the customer, any part or portion thereof which our examination shall disclose to our satisfaction to be defective. After one year from date of delivery to the original purchaser a charge will be made for any adjustments or service calls (other than for the replacement of the Household Mechanical Unit as stated herein to the purchasers of the Five Year Protection Plan), and for any repairs to the cabinet, its finish, the temperature control, the fan, or the mechanical unit.

FIVE-YEAR PROTECTION PLAN

(Optional and $5.00 extra within 30 days from purchase)

We warrant to the purchaser of this plan, the new 1936 O'Keefe & Merritt Household Mechanical Unit described below to be free from defccts in material and workmanship under normal use and service, and we will, within five years from date of delivery to the original purchaser of this Mechanical Unit wherever O'Keefe & Merritt factory service representatives are maintained, replace without cost this Household Mechanical Unit, if our examination shall disclose to our satisfaction that it is defective. The foregoing applies only to the Household Mechanical Unit under conditions specified herein, and does not apply to any other parts of the refrigerator. The Mechanical Unit is defined as the electric motor, compressor, condenser and sump tank.

Neither warranty applies to any material which has been subject to misuse, neglect, alteration or accident, or repair by other than O'Keefe & Merritt authorized service men; both are subject to conditions set forth as User's Responsibility stated on the reverse side of this Warranty; are in lieu of all other Warranties expressed or implied and we do not authorize any person or representative to assume for us any other liability in connection with our products.

User's Responsibility is defined on the reverse side of this Warranty.

Removal of original serial numbers from mechanism or cabinet voids this Warranty in its entirety. This Warranty is not transferable. Service calls other than those specified in this Warranty will be made at the expense of the User.

Cabinet 1936 Serial No. ..... Mechanical Unit 1936 No. .....

This certifies that .....is the purchaser of the Five Year O'Keefe & Merritt Protection Plan on the above unit.

(The Five Year Protection Plan is valid only when this Warranty is signed by an officer of the O'Keefe & Merritt Company.)

O'KEEFE & MERRITT COMPANY

By.....

USER'S RESPONSIBILITY

The following items, since they are not manufacturing defects, are not included in the warranty, but are the responsibility of the User:

1. User's accidental damage to any part of the O'Keefe & Merritt Electric Refrigerator.
2. Replacement of light bulb inside of cabinet in models so equipped.
3. Defrosting the freezer.
4. Temperature adjustments due to extreme or varying climatic conditions.
5. Excess storage of food in cabinet obstructing circulation.
6. Blown fuses on house wiring stopping refrigeration.
7. Oiling electric motor.

SPARTON

REFRIGERATOR WARRANTY

We warrant to the original Purchaser each *new* SPARTON Refrigerator to be free from defects in material and workmanship under normal domestic use and service. Our obligation under this Warranty being limited to replacing without cost to the Original Purchaser, any part or parts which prove thus defective within one year from date of original installation by an Authorized SPARTON Retail Dealer, and which our examination shall disclose to our satisfaction to be thus defective. This Warranty being expressly in lieu of any other Warranty, expressed or implied, and of all other obligations or liabilities on our part, and we neither assume nor authorize any representative or any other person to assume for us any other obligation or liability in connection with the sale of said Refrigerator or any part thereof.

This Warranty will not apply to any Refrigerator or any part thereof which shall have been repaired or altered outside of our factory in any way, so as in our judgment to effect its stability or reliability, nor which has been subject to misuse, negligence or accident, or which has had the serial number effaced or removed. Neither shall this Warranty apply to any Refrigerator which has been connected otherwise than in accordance with instructions.

The term "Original Purchaser," as used in the foregoing Warranty shall be deemed to mean that person, firm, association or corporation for whom the Refrigerator referred to therein is originally installed.

4 YEAR REFRIGERATOR REPLACEMENT CONTRACT

(Additional to the One Year Warranty)

Refrigerator Serial No..... Contract No.....
Model No..... Compressor Serial No.....
Purchasers Name..... Date Original Installation.....
Installation Address..... Purchasers Address.....
City..... State.....

This contract is non-negotiable and non-transferable.

SPARKS-WITHINGTON CO.
Jackson, Michigan

We warrant, to the original purchaser of the above Refrigerator for the four years next following the expiration of the one year warranty, the condensing unit (consisting of motor, compressor, receiver, expansion valve, condenser and belt) to be free from defects in material and factory workmanship under normal domestic use and service. Liability under each warranty to be limited to repairing or replacing any part of said condensing unit which proves defective due to defects in material and/or factory workmanship, and only after our examination shall disclose to our satisfaction that it be inoperative due to such defects. No liabilities shall be assumed for damages to said condensing unit, or any part thereof which has been subject to accident, alteration, abuse, misuse or electrical disturbances. This warranty does not apply to porcelain, hardware, finish, or any part of the cabinet or cooling unit or controls or clock. This warranty does not provide for adjustments or any other service required by the condensing unit other than repair or replacement of parts as provided above, nor for loss or damage due to wear, tear and/or gradual depreciation.

Martin Urges 'Step By Step' Selli ng of Electric Kitchens

BIRMINGHAM, Ala. — Suggestions for the sale of an electric kitchen "step by step" were made by H. L. Martin, of the national Kitchen Modernizing Bureau before members of the Birmingham Electric Refrigeration Bureau, meeting to organize a branch of the modernization bureau.

R. P. McDavid, of R. P. McDavid & Co., Kelvinator dealer, was named president of the new local bureau, and D. S. Richard, dealer sales manager of the Birmingham Electric Co., secretary-manager.

Women's habit of matching and harmonizing in the home, as well as in dress, could be extended to the kitchen, where with a modern plan to guide her, she can fit one kitchen item at a time into her scheme, Mr. Martin declared.

"Ten billion dollars will be spent in home modernization in the nation during the next ten years and $10,000,000 this year alone," Mr. Martin predicted. A good part of this, he said, will bring old-fashioned kitchens up to date.

In planning a kitchen, the refrigerator should be near the back door because the food enters there; next there should be a work surface joining the refrigerator to the sink, another work surface between the sink and the electric range, and still another where the food pauses on its way from the range to the dining room, according to Mr. Martin's theories of kitchen lay-out.

Hotels Told Guests Expect Air-Conditioned Rooms

NEW YORK CITY—With better times and a restored ability of the public to spend money, hotels must be prepared to adjust themselves to changing conditions if they are to attract patronage, writes Paul Simon in a recent issue of *Hotel Gazette* magazine.

The new run of guests will come to expect air-conditioned rooms as a necessity, just as they now expect tiled bathrooms and individual telephones, Mr. Simon says. Better food, served in more attractive and comfortable surroundings, is already increasing restaurant patronage, he adds.

C.I.T. Opens Fourth Office in Georgia

SAVANNAH, Ga.—Opening of the Commercial Investment Trust Corp.'s new branch office in the Blum building, 35 Bull St. here, marked the establishment of the finance company's fourth Georgia branch office. Others are located in Atlanta, Augusta, and Rome.

J. H. McDonald, local representative of the C. I. T. Augusta office, is in charge of the new branch which has been opened to serve 11 counties in this immediate vicinity.

J. H. Peebles, Atlanta, supervisor of the C. I. T. offices in Georgia, Florida, and Alabama, who made arrangements for the inauguration of the Savannah office, stated that C. I. T.'s expanding business in this district, and indications of general business improvement in the state, led to the establishment of the new branch.

Dorsey Furniture Opens Fourth Branch Store

GIBSON, Ga.—Fourth branch store of the Dorsey Furniture Co., Leonard dealer with headquarters in the southern part of the state, was recently opened under the managership of George Taylor.

Important
to Manufacturers of Display Refrigeration Equipment

The new LOXIT type Ace Hard Rubber Doors are attracting wide attention due to their new and valuable improvements in construction and design. • It will pay you to investigate LOXIT *at once* as the new doors are now available at no extra cost. Write to

AMERICAN HARD RUBBER COMPANY
11 MERCER STREET, NEW YORK, N. Y.
AKRON, OHIO • 111 W. WASHINGTON STREET, CHICAGO, ILL.

LINE STRAINERS
DEHYDRATORS
SCALE TRAPS

• Purify your refrigerant lines.
• Absorb moisture for freeze prevention.
• Trap scale before damage results.

Weatherhead MAKES THEM

• Weatherhead manufactures a complete line of fittings and valves in both the SAE and the Inverted types. Write for our new catalog.

The WEATHERHEAD Company
620-714 FRANKFORT AVE. • CLEVELAND, OHIO

Around the World

With George F. Taubeneck

Australian Producers Find Success by Copying Designs Of U.S. Refrigerating Units

This week Editor George F. Taubeneck tells about his visit to Melbourne, Australia. His stories about Hawaii, Samoa, Fiji, and New Zealand have appeared in previous issues.

An air mail letter just received from Singapore indicates that the record of his experiences in other cities of Australia, also Papua and Java, now on the way to Detroit by regular mail, will make several instalments of his "World Series" travelog.

In a radiogram from Cairo, received just as we go to press, George reports that his health is good, that he has seen the new King of Egypt, that he has given the Sphinx and the Pyramids the once-over, and that he will visit Palestine this week. (Palestine is a very active market for refrigeration equipment this year.)

Freeza Jolly Good Fella

Perhaps never before in my life have I been so emotionally affected by an act of friendliness and hospitality as during the formal dinner given for me at the Scott hotel, Melbourne, by leading refrigeration executives of Victoria, Commonwealth of Australia.

The Scott hotel is one of the fine, old, tradition-steeped, luxuriously appointed, built-for-royalty hotels of the British Empire. The men who came to that banquet, to welcome the editor of ELECTRIC REFRIGERATION NEWS to Melbourne, fitted the sumptuous surroundings like Fred Astaire's feet fit into dancing shoes. They were of that fine type of British gentlemen, distinguished in appearance and cultured in speech, who seem to have attained a more highly *civilized* state than any other racial group.

Before the dinner—which was excellent—they toasted the new King. After the dinner, they toasted *me*. Nothing quite so nice has ever happened to this writer as that toast. Here's how it was done:

First, FRANK SLESSAR (whom we had met in America, and whom we'll indentify in detail later), proposed the toast, with a little speech about us. Then, far down at the other end of the table, big ED GORDON from a rival manufacturing firm arose to second the proposal of the toast, and to say some nice things about the paper.

Then they all stood up, clicked heels, clinked glasses high across the long banquet table, drank them down, sang "For He's a Jolly Good Fellow," and gave three cheers.

If it happens to you some day, you'll understand how all-choked-up the writer felt. Here we were in a strange land among strange people, as far away from home as we could possibly be—and two dozen of the leading citizens had dressed in formal attire and left the comfort of their homes to play host to us at an elegant dinner, where they uttered a mass wish for our health, success, and happiness, in their traditional manner. That was a moment we shall always remember, with deep gratitude.

* * *

Protected Pirates

Now that we have that off our chest, we're going to bring to light a fact which may look to American readers as if we were biting the hands that fed us. But let us hasten to assure you that the Australians themselves freely admit and discuss this fact, and won't be at all insulted at our mentioning it. Here it is:

Australian industry has been developed by pirating American designs and manufacturing them behind exorbitantly high protective tariff walls.

Less than seven million persons live in the continent of Australia (an area approximately the size of the United States). Australian manufacturers claim that this market is too small to permit either mass production or laboratory development work, so that the only way they can exist is to follow the formula outlined in the paragraph above.

This condition holds true especially in the refrigeration industry (although the practice has spread to remote corners of business enterprise—one of my fellow-passengers on the *S. S. Mariposa* was both startled and enraged to hear herself on the air, the day we landed in Sydney, in an episode of an American dramatic radio serial program, which had been recorded and brought to Australia, where stations were using it without recompense to the talent).

In our stories on the various refrigeration manufacturing concerns in Australia, which follow, you can read who has pirated whose.

Frank Hansen Introduces Taubeneck at Melbourne Banquet

During his stay in Melbourne, Australia, Editor George Taubeneck was guest of honor at a banquet given him by leading refrigeration distributors and manufacturers of the city. (1) Frank Hansen, general manager of F. C. Lovelock & Co., Ltd., Sydney, introduced him to those present. (2 and 3) Banquet table scene. The man in the foreground of the middle group is William A Gordon, works manager of Gordon Bros.

R. Werner & Co.

A few hundred words back we promised to indentify FRANK SLESSAR. He is managing director and sales manager of R. Werner & Co., Pty., Ltd., which has been manufacturing industrial refrigeration machines for 35 years in Melbourne.

R. WERNER, Sr., is managing director, and RUDY WERNER director and secretary of this concern.

This concern has manufactured and sold more than 8,000 refrigerating machines in Australia, including small commercial machines patterned after Williams Ice-O-Matic designs, which have been included in the line during recent years.

The elder Mr. Werner is a grand old German (of whom we got some good candid shots). Also throughly German is his son, Rudy, who studied engineering in the United States at Armour Institute of Technology and Seibel Institute.

Mr. Slessar came to America a couple of years back seeking a line of household refrigerators which he could import *complete* (most American household refrigerators are assembled and partly built, in Australia, because of tariff).

The Major (manufactured by Sunbeam, identical with Coldspot) line seemed to suit his taste, and so the writer helped arrange the deal—much to the pleased astonishment of Major, which had an order for several hundred refrigerators dropped into its lap by a customer they had never heard of before.

(Two months later Major flatly refused to spend a nickel for advertising in the *Refrigeration Directory*—which is gratitude for you.)

At that time we were more than impressed with Mr. Slessar's polished suavity and his easy good fellowship, and saw quite a bit of him. It was grand to see him again on his home grounds.

The company manufactures commercial units, using methyl chloride, in sizes from ½ hp. to 15 hp., and ammonia compressors from ½ to 250 tons. It also manufactures air-conditioning units, using Freon (this is a recent development), and all types of evaporators—using ammonia, Freon, and methyl chloride.

Units made by the company are used on display cases, combination cabinets, beer coolers, and cooling chamber units of all types, for almost every type of storage.

The company employs approximately 200 men in its factory, and the Victorian sales staff alone numbers about 15 men.

American-made products which the company sells include Major domestic refrigerators (which we mentioned previously); Detroit Lubricator solenoid valves, expansion valves, and controls; sylphon bellows from Bishop & Babcock; Penn pressure controls; ammonia solenoids from Automatic Valve Co., Chicago, and American copper tubing. The company also imports some thermostats from Teddington, England.

The American-made products mentioned are obtained from F. C. LOVELOCK, manufacturers' agent, Sydney.

Sales set-up in the Victoria office is under the direction of Mr. Slessar as sales manager, and is divided into two chief departments— city and country—each under the supervision of separate sales manager. Working under the city sales manager are a staff of six men; from four to six men work under the country sales manager.

The organization maintains dealers in most of the large country towns, and is represented in western Australia, south Australia, and New South Wales by organizations similar to the one in Victoria. In Queensland, the company has an air-conditioning representative.

City salesmen are paid salary and commission; sales managers, salary and commission plus an allowance for automobiles.

Ordinary salesmen, says Mr. Slessar, will earn about 4 pounds, 10 shillings per week; good men, 6 pounds. Commission ranges from 2½ to 5%, depending on the price of the equipment.

The salesmen sell refrigeration equipment only. Best men, forming the nucleus of the sales organization, are kept on the job throughout the year; the poorer men are let out in winter.

Most salesmen are obtained, says Mr. Slessar, from newspaper advertising, recommendations made by other salesmen from personal knowledge, and from competitors.

New salesmen are given a course in sales training, after which they start their sales careers, going out with a veteran salesman to learn the ropes. This is the only way you can teach men in Australia, Mr. Slessar says.

"'Canned' sales talks here are practically useless," he contends.

As far as the company's advertising program is concerned, Mr. Slessar says, it is practically all newspaper advertising—dairy, butcher, and other trade journals being especially valuable. Most sales, he says, come from direct contact with prospects, dug up in one way or another.

The company tries no other form of advertising other than newspaper. Some time back, it did try films and wireless, but without success, Mr. Slessar says. The company has also experienced some success from displaying domestic units in theater lobbies.

In importing refrigerating units to Australia, chief trouble is that the condensing units are apt to be too small, Mr. Slessar says.

Extra prices on voltages of motors for use in the country are high. Standard current, in this section of the country, is either 50 cycle, 200 volt, of 50 cycle, 230 volt. In Western Australia, the standard current is 40 cycle, 250 volt.

Rudy Werner, director and secretary of the Werner company, claims for it the record of having made both the largest and smallest ammonia and methyl chloride units in the country.

"We manufactured the largest ammonia compressor in the southern hemisphere—250 tons capacity, four cylinders," he said, "and the smallest methyl chloride unit—⅛ hp."

* * *

Selling in the 'Country'

C. (TUP) KINGDON, country sales manager, was full of interesting information of how the company manages that end of the business.

"Four salesman and myself are working in the country at present," he said. "Our men cover the state of Victoria, starting from a 20-mile radius of Melbourne.

"Salesmen are paid 4 pounds, 10 shillings per week, 3 pounds for expenses, and an equal amount for

(Continued on Page 35, Column 1)

Refrigeration Plants and Other Melbourne Scenes

This series of candid camera photographs was snapped by the editor during visits to Melbourne refrigeration manufacturing plants, and shows the close similarity between Australian and American manufacturing methods.

(1) The Melbourne office of Kelvelectric, Pty., Ltd. Jack Burgess is managing director and Don Queale sales manager. The company operates under Kelvinator (Australia) Ltd. (2) This Copeland unit is behind the bar in the pub at Mt. Victoria, New South Wales. (3) George learns about kangaroos. These are pets. (4) Street scene in Melbourne, much like any mid-size American city. (5) Several hundred pounds of the Gordon brothers regard the goings-on inside their plant enclosure.

When Melbournites Toasted the New King—and George!

A high spot of the editor's stop in Melbourne was the banquet given for him by leading refrigeration men at the Scott Hotel. Upper left: The view from the head of the table as the banquet began. Right: During the meal. The editor is second from the left in the picture. Lower left: "For He's a Jolly Good Fellow!" Drinking the editor's health. Right: Just before he begins his speech, the editor snaps another banquet table group.

(*Continued from Page 34, Column 5*)

petrol and oil. They must furnish their own cars.

"The men get 2½% commission on all sales they make, except where the agent in that territory cooperates, in which case the commission is halved.

"Agents' commissions vary in almost every town—principally according to the capabilities of the various men. The average commission is about 10%.

"Our men sell nothing but refrigeration. Good men, when we find them, are kept on the job throughout the year."

Most new men, Mr. Kingdon said, are contacted through members of the regular sales organization.

"Good men are very hard to get," he added. "When we get novices, we train them in classes, after which I take them with men for one or two trips through a part of the territory, until they sort of get the hang of things."

Sales strategy? The company has no set operating plan on sales, Mr. Kingdon says—doesn't believe in one.

"In most cases, we rely on the native cunning of the individual salesman," Mr. Kingdon says. "If he has it, he makes a good salesman—if he hasn't, he doesn't last very long."

That, it seems, is the only method which works.

While advertising is important, and Mr. Kingdon is not one to deny its potency, he nevertheless believes that most of the company's sales, in this department at any rate, are a result of the recommendation of satisfied users.

Mr. Kingdon's only complaint with Major is the lowness of its cabinet.

"Bottom-mounted units are favored most in this country," he says, "because the food compartment is more convenient to get at.

"We have overcome this objection to our line of units by placing them on a stand from 4 to 5 inches high."

Which, in our humble opinion, is heads-up business—in any land.

The Werner company is getting into the air-conditioning business (up until a few months ago Carrier had practically no competition in Australia), and expects to make a big thing of it.

At present Werner cooperates with Crossle & Duff, a Melbourne firm which manufactures Trane low sides for use with Werner compressors in air-conditioning installations.

* * *

Half a Ton of Gordons

Arch business rivals, but close personal friends, of the Werners are the Gordons—five of them, all brothers, all hefty as heavyweight rasslers (fact is, they did compose a professional acrobatic team many years ago).

ERNEST R. GORDON is managing director, EDWIN G. GORDON is secretary, WILLIAM A. GORDON is works manager, ARTHUR H. GORDON is sales manager, and GEORGE GORDON is machine shop foreman of Gordon Bros. Pty. Ltd., Refrigerating Engineers.

Like the Werners the Gordons are good Germans. Which means that they are painstaking craftsmen, and that they like their beer.

Last year ERNEST GORDON visited us at 5229 Cass Ave., unfortunately arriving right in the middle of the going-to-press rush, so that he didn't get as much attention as he deserved. Another Gordon brother will come over next year and, we hope, will get a better reception.

Patterning their machines closely after Frick designs, Gordon Bros. manufacture sulphur-dioxide compressors from ¼ hp., and ammonia compressors up to 100 tons. They started out 20 years ago as general engineers, deciding to specialize on refrigeration in 1918.

In addition to their refrigerating machinery line, they make ice cream cabinets, ice bar (frozen colored water—a big vogue among Australian and New Zealand children) equipment, beer coolers, commercial cabinets and display cases, a new machine for flavoring and carbonating milk (turning out what they call "champagne milk") and bakery machinery for the London-and-Saginaw firm of Baker-Perkins.

They are building their business out of profits, slowly but steadily, and feel that they are on the threshold of a very big (for Australia) business.

American-made products the company handles, all of them bought through Lovelock, include Fedders valves, Kerotest stop valves, American Brass Co. copper tubing, Ranco thermostats, and Penn controls. Teddington thermostats, English-made, are also handled.

Information on the company sales organization was forthcoming from Sales Manager Arthur Gordon.

In Melbourne, Gordon has six salesmen regularly, increasing its force to eight men during the busiest season. In all other large cities, the company is represented by reputable independent dealers and agents.

Salesmen are paid a salary of 4 pounds, 10 shillings per week, with a 7½% commission on sales. In some cases, when the salesman is allowed expenses for operation of his automobile, this commission is cut to flat 5%.

The men sell refrigeration only. Sometimes, during the winter periods, Mr. Gordon said, it is necessary to let out half of the regular sales force, and keep but three men on the job.

New salesmen (and, like Mr. Slessar, Mr. Gordon admits they are hard to get) are obtained principally through advertising, or through the recommendation of salesmen or agents.

These newcomers are taken in hand by Sales Manager Gordon, who gives them a good stiff course in salesmanship. This isn't enough, though— and so the men are usually put through the Gordon Workshop.

A certain amount of practical experience is absolutely essential to sales success, Mr. Gordon contends. This experience in workshop, together with the explanation of the company's selling policy as given in the other training, has been found the most effective method of turning out good men, Mr. Gordon says.

Most of the company's advertising, according to Mr. Gordon, is done through the use of outside posters. This has been found most effective, more so than any other one form. During the selling season, the company also makes extensive use of show card advertising.

* * *

Kelvelectric Training

JACK BURGESS is managing director, and DON QUEALE sales manager of Kelvelectric Pty. Ltd., Kelvinator distributor in Melbourne.

Equipment which the company sells is obtained from Kelvinator of Australia, Ltd., Adelaide. This includes condensing units, coils, and refrigerating controls. Cabinets are not all imports, some of them coming from Kelvinator of Australia, and others from local Melbourne cabinet manufacturers.

Kelvinator of Australia, Ltd., is limited to a distributor in each state. In Victoria, Sales Manager Queale controls eight salesmen, in addition to about 25 dealers in the country sections. The setup in Melbourne is typical of Kelvinator organization in other states of Australia as well.

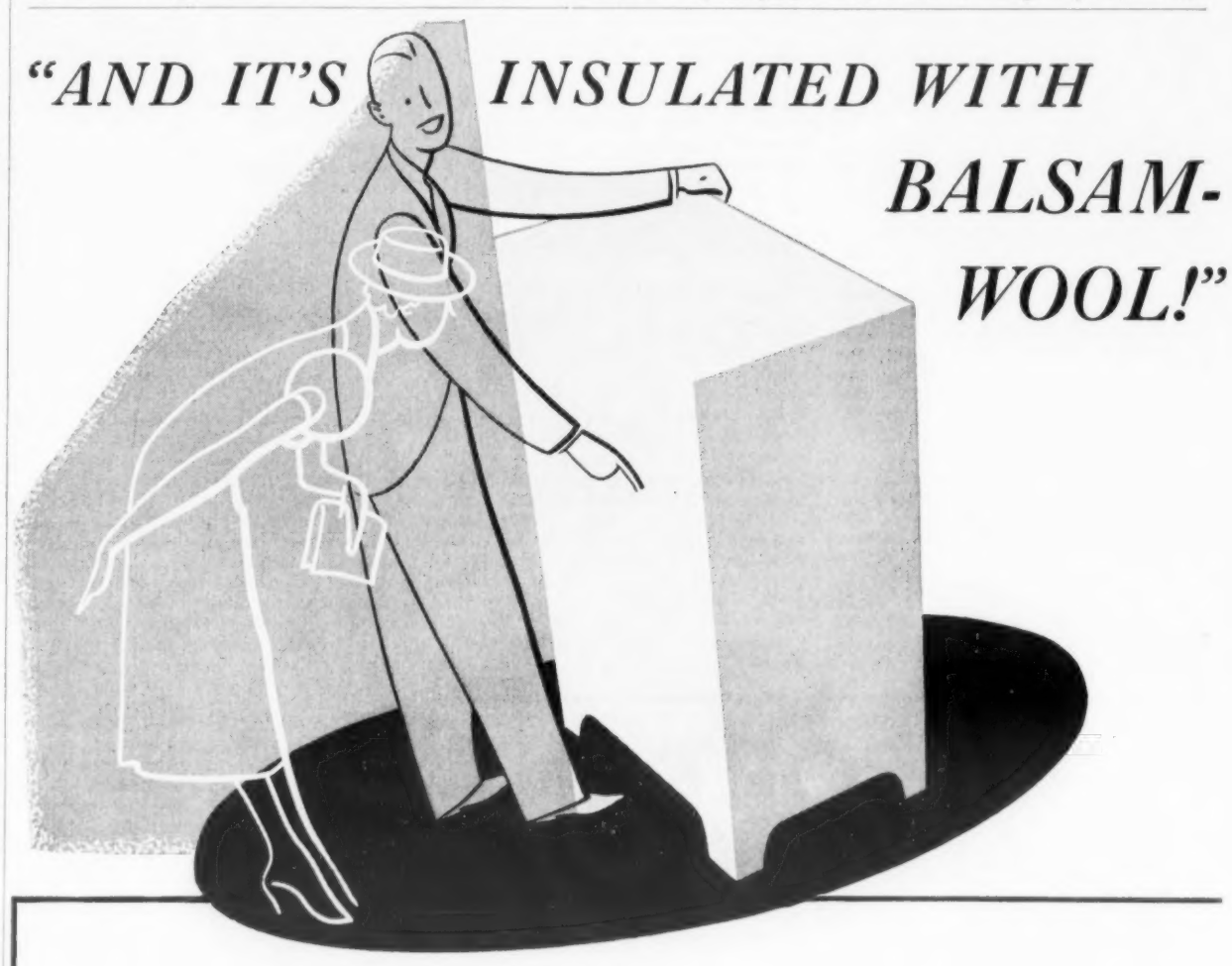
Salesmen are paid a standard rate, fixed by law in Australia, of 4 pounds,

(*Concluded on Page 36, Column 1*)

Friendly Competitors

Above, left: Frank Hansen and Arthur Gordon join in the singing of "For He's a Jolly Good Fellow." Right: Mr. Hansen in another attitude. Lower left: William Gordon refills his glass for the next toast. Right: Frank Slessar, of R. Werner & Co., and (behind him) Duncan Bain, country sales manager for New System Telephones Pty., Ltd.

"AND IT'S INSULATED WITH BALSAM-WOOL!"



CERTAINLY she's interested in the fact that Balsam-Wool insulation is used in this modern, up-to-date refrigerator. She *knows* about Balsam-Wool. For years it has been America's leading home insulation. For years it has provided an effective barrier to the passage of heat and cold in the homes of the nation. Mentioning Balsam-Wool insulation to a refrigerator prospect is a real advantage.

Balsam-Wool is being used in more refrigerators than any other type of insulation. Balsam-Wool's efficiency on the job means complete and *permanent* satisfaction to the refrigerator buyer—economy and profit to the refrigerator cabinetmaker. Let us give you complete details about Balsam-Wool Fiber Slabs.

WOOD CONVERSION COMPANY
Room 158, First National Bank Bldg.
St. Paul, Minn.
New York, N. Y. • Chicago, Ill.

BALSAM-WOOL FIBER SLABS
PRODUCT OF WEYERHAEUSER

Australian Refrigeration Leaders

Personalities in the refrigeration field in Melbourne, and a preview of some the editor met in Sydney, his next stop. Above, left: Typically German, the Gordon brothers like their beer. Right: Frank Hansen, Lovelock's general manager, with W. A. Donner, manager, and C. F. Tyler, refrigeration sales manager, of Gramaphone Co., Ltd., Sydney. Lower left: R. Werner, head of R. Werner & Co. Right: Mr. Hansen, Rudy Werner, and R. E. Trucken.

As George Was Greeted at Two Melbourne Plants

Visits to local manufacturing plants were also on the editor's Melbourne calendar. Here he is being welcomed to two of them. (1) Four of the five Gordon brothers, before taking him in to look around, pin a decoration. (2) Warm greeting from Frank Slessar, managing director and sales manager for R. Werner & Co.

Compensation for Melbourne Salesmen Is Fixed by Australian Law

(*Concluded from Page 35, Column 5*)

10 shillings per week, and a commission. On this basis, Mr. Queale says, the usual basis of remuneration is about 2 pounds, 5 shillings per week, plus about 6% on sales.

The men specialize on refrigeration, handling domestic and commercial sales separately. During the winter season, the sales staff is reduced, but key men are kept on the job the year around.

Salesmen are obtained principally through advertising in newspapers, or through direct applications to company officials.

Sales training is along the lines of Kelvinator training in the United States. Special classes are given to educate new men in the fundamentals of salesmanship, after which each one is given a few days in the territory. This early work brings out the faults in his sales procedure, and Mr. Queale then goes over his shortcomings with him, analyzing them, and pointing out methods of correction.

To promote sales the company uses both newspaper and direct mail advertising, using daily newspapers and trade journals, and circularizing the various trades by mail at regular intervals.

The company is especially strong on direct mail advertising, which it has found an excellent sales-producing movement. No sales stunts of any sort are attempted.

Standard American refrigerating equipment is all right for use in Australia, both Mr. Burgess and Mr. Queale agree, with the exception that Australian motor specifications are different from American, and units must be changed to meet this variation.

* * *

New System Telephones

New System Telephones Pty. Ltd., handles distribution of "Electrice" refrigerators in Victoria.

D. E. WILLIAMS is acting manager, in the absence, through illness, of M. BUTLER, regular manager. C. H. CUFFE is sales engineer with the firm.

American-made refrigeration products handled by the company, all of them purchased through F. C. Lovelock, Ltd., include Universal's solenoid valves, Detron Lubricator expansion valves, Penn water valves, Ranco thermostats, and copper tubing. Teddington (English) thermostats are also handled.

Sales organization of the company under Mr. Williams consists of a city department, with a city sales manager, nine city distributors, and four city salesmen; and a country department, with 60 country dealers, and four "travelers," or country salesmen.

Training of new men is accomplished by a series of sales schools held during the regular season, coupled with individual training by the sales manager. A sales manual, gotten up by the company, is used as the basis of this training.

The company cooperates with dealers through advertising in both the daily press and trade journals, and by direct mail advertising and dealer display helps.

In addition to household equipment, the company also manufactures commercial models of various types, including display counters, combination cabinets (for ice cubes, ice cream, food, and bottle storage), dairy equipment, fish storage equipment, fur storage, mortuary equipment, milk bars and soda fountains, oil cooling, fruit storage (especially bananas and crushed fruit), and refrigerated windows.

H. V. SEGAL is refrigeration sales manager, and DUNCAN BAIN manager of the country refrigeration and radio divisions.

Salesmen, in the city, are paid 5 pounds per week, plus a small commission. Country salesmen get 3 pounds per week, plus car allowance and expenses.

The company handles radio and washing machines, in addition to refrigeration, but the whole crew concentrates on the latter line during the selling season, Mr. Williams reports.

In the off season, some of the men are discharged; but the best ones are retained, being switched over to radio sales work. This is especially true of the country sales force.

Best way to get salesmen, Mr. Williams finds, is through advertising, and as a result of applications for jobs made direct to the company. A good many men—good ones, too—are obtained from competitors—by the simple, but effective, expedient of offering them more money.

In addition, the company stimulates dealer activity through use of a house organ, "The Mouthpiece," issued regularly. An elaborate commercial catalog is sent to all prospects, and has proved quite a potent aid to inducing sales.

* * *

Marco Buys British

Marco Refrigerators Pty. Ltd., is Australian agent for Marco (English) domestic refrigerators as well as a complete line of air and water-cooled commercial units.

L. T. Fox is manager and director of the company; W. D. GILLESPIE and L. J. FOX are directors, and W. L. F. HACKET is sales manager.

Compressor units are manufactured in England, together with expansion valves, thermostats, and all control gear.

Domestic cabinets are imported from England; commercial jobs have an English mechanism, and cabinets of local Australian manufacture.

Fifty per cent of the cabinets for the commercial installations which the company sells are made in its own Melbourne plant. All electric motors used, however, are of English manufacture.

The refrigerating systems are made for sulphur dioxide, methyl chloride, and Freon, in a complete range of applications. Refrigerants are imported from Imperial Chemical Industries, Ltd., England. All expansion valves and thermostats are made by the British Thermostat Co., Ltd., Slough, England.

The company keeps a force of salesmen in the field at all times, the number depending upon the season of the year. Country agents are spotted throughout Victoria.

Salesmen sell Marco refrigerators only—nothing else. Concentration of efforts, the company has found, pays big dividends. When winter comes, the poorer men are released. Only the top producers are kept on the job throughout the year.

Salesmen, when they join the company, are thoroughly schooled in the whys and wherefores of refrigeration selling. But the company doesn't attempt to give the men a "canned" sales talk. Sales efforts, experience has shown, must have an almost infinite variety—they must be made to conform to the individual situation.

This calls for wide-awake selling—and heads-up men are at a premium, here, as elsewhere.

Direct mail advertising has proved the company's best method of promoting sales. There is little choice, however, between this method and the good old American "use the user" scheme. A satisfied customer is the best possible advertisement, Mr. Fox admits.

In fact, sale for sale, he thinks users will not only prove right up along side direct mail advertising methods—but may, in the end, have a bit the better of the competition.

Headquarters of the company is in South Yarra, Victoria. Best dealer representation, judged by results, is New South Wales and Queensland, where W. H. Paling & Co., Ltd., handles sales. Strong representatives are also located in Sydney and Brisbane, Mr. Fox reports.

* * *

Sparton Well Represented

International Radio Co. handles Sparton refrigerators in Australia. Headquarters of the company is in Sydney, with branch offices in every state in Australia, as well as in New Zealand.

N. SWANN is manager of the Melbourne branch, with C. E. FORREST as managing director. In the state of Victoria, International Radio has six distributors: Ball & Welch, Maples, O. J. Nilsen, Glens, Carnegies, and Lawrence & Hansen. The Melbourne branch serves all of them.

The branch is a strictly importing branch, bringing in complete refrigeration units and passing them direct to distributors, who do the actual merchandising. The company employs no direct salesmen.

Advertising by the company itself is confined to trade magazines—mostly radio—but insistence is made that all distributors make extensive use of the daily press for advertising purposes, Mr. Swann says.

* * *

'Zaristo' (It's an Insulation)

Insulation manufacturer in Melbourne, distributing throughout Australia, is W. H. Brewer Pty., Ltd., of which H. C. BREWER is managing director.

The company's "Zaristo" brand corkboard, sectional pipe insulation, and covering for cold pipe lines is widely known and used throughout the country. Raw material for its manufacture is imported from Spain and Portugal.

In addition to corkboard and cork insulation, the company also manufactures asbestos goods, and the four salesmen which the company employs regularly sell both materials throughout their territories. Standard salaries for salesmen are 4 pounds, 10 shillings per week, plus car expenses, and 2½% commission on all sales.

The company's advertising covers both users—who may be prospects for additional material, and prospective users. Media for prospects include refrigeration journals and industrial magazines. For users, direct mail has proved most effective in putting more business in the "repeat" column, Mr. Brewer says.

* * *

Eckersley & Son Pty.

Eckersley & Son Pty., Ltd., South Melbourne, manufactures soda fountains and fountain equipment commercial and domestic refrigerating units in sizes from ⅛ to 5 hp., evaporators, controls, air-conditioning units, and ice cream cabinets.

ALBERT T. CRICK is the company's technical manager; ARTHUR J. ECKERSLEY is governing director.

American products imported by the company include methyl chloride and Freon refrigerants, Fulton Sylphon bellows, and Century electric motors. The company maintains a complete dealer organization in all states of Australia as well as in New Zealand.

Salesmen travel for the Eckersley Company in both city and country territories, during all of the year. Country salesmen, many of whom are specialty men, are paid a straight commission of 10% on all sales, with no guaranteed income. For that reason, no restriction is placed on the men's handling other lines of products, if they desire.

City salesmen, however, work on salary and commission, and confine their efforts exclusively to Eckersley-made merchandise.

* * *

Quirke Men Go to School

HERCULES THOMPSON is head of Quirke Refrigerators Pty., Ltd., manufacturer—distributor of domestic and commercial refrigeration products in Melbourne and throughout Victoria.

Quirke Refrigerators imports thermostats, expansion valves, and magnetic valves from British Thermostat Co., and Automatic Products Co. in United States.

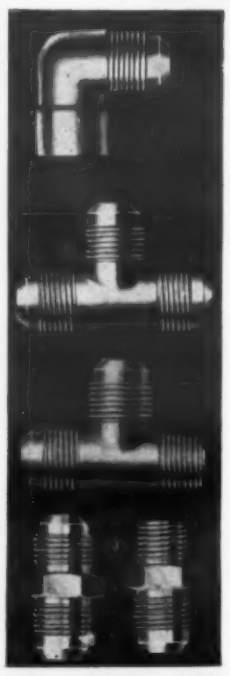
The company has five salesmen, a sales manager, and 10 agents in the state of Victoria. These salesmen and agents handle refrigeration exclusively.

Staff men are paid a basic wage (around 4 pounds, 10 shillings, presumbly), and a commission on their total sales, which ranges up to 10%.

A regular crew is kept at work throughout the year, with additional men being taken on during the warm months, when activity in the field is at its peak. New men are trained in special classes conducted by Mr. Thompson, and are thoroughly schooled in both practical and theoretical sales procedure before they are put on the road. Initial field experience, in most cases, is obtained in cooperation with an experienced man, though in the thick of the selling season this preferable practice is not always possible.

Newspaper advertisements Mr. Thompson rates as the best method of promoting sales; interviews with prospects, or the cold canvass, he ranks next in effectivness, with trade journal advertising following. The last-named method is porticularly valuable in seeking out commercial business, Mr. Thompson says.

IMPORTANT



Of course fittings are important. Should the fittings not make tight, seepage-proof joints, an entire unit will be condemned. If the fittings do not perform 100% the rest of the job **cannot** function correctly.

Realizing the importance of dependable fittings, Commonwealth Brass Corporation has specialized on their production ever since the birth of the industry.

Owning and operating, under one control and management, modern forging departments, tool, die and pattern shops, as well as the very latest types of automatic lathes, Commonwealth is well equipped to supply **any** quantity of seepage-proof fittings to meet the industry's requirements.

Supplementing the superb mechanical equipment is the veteran skill of a staff whose knowledge of refrigeration and its problems is most profound.

Buyers of Commonwealth fittings may **always** rely on the perfection of workmanship in both design and fabrication which has for so many years made Commonwealth the approved source of these important items.

Quotations promptly on receipt of sample, blueprint or sketch.

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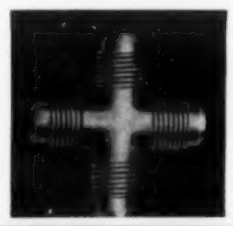

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Text of Complaint Issued by Federal Trade Commission Against Coolerator Co.

On April 22 the Federal Trade Commission made public a complaint against the Coolerator Co., charging that false, misleading, and disparaging representations made in the Coolerator Co.'s booklet "Why Ice is Best for Refrigeration" have a tendency to mislead and deceive a substantial portion of the purchasing public into the false and erroneous beliefs that such statements are true and that electric refrigerators are undesirable, ineffective, and harmful.

Complete text of the complaint issued by the Federal Trade Commission is published on this page.

Of particular interest is *paragraph 6* of the complaint, which sets forth the representations made in the Coolerator Co.'s booklet, and *paragraph 7*, which tells why these statements are false and misleading.

UNITED STATES OF AMERICA
BEFORE FEDERAL TRADE COMMISSION

In the Matter of
The Coolerator Co.,
a corporation

COMPLAINT

Docket No. 2770

Pursuant to the provisions of an Act of Congress approved Sept. 26, 1914, entitled "An Act to create a Federal Trade Commission, to define its powers and duties and for other purposes," the Federal Trade Commission, having reason to believe that The Coolerator Co., a corporation, hereinafter referred to as respondent, has been and now is using unfair methods of competition in commerce as "commerce" is defined in said Act, and it appearing to the Commission that a proceeding by it in respect thereof would be in the public interest, hereby issues its complaint stating its charges in that respect as follows:

Paragraph one: Respondent, The Coolerator Co., is a corporation, organized, existing and doing business under and by virtue of the laws of the State of Minnesota, with its principal office and place of business at 50th Ave. W. and Wadena, in the City of Duluth, State of Minnesota. Respondent is now, and has been for some time, engaged in the business of distributing and selling to dealers for resale, in commerce as herein set out, refrigerators using natural or artificial ice as the cooling element therein.

Paragraph two: Said respondent, being engaged in business as aforesaid, causes said refrigerators, when sold, to be transferred from its office and principal place of business in the State of Minnesota to purchasers thereof located in various States of the United States other than the State of Minnesota and in the District of Columbia. There is now, and has been at all times since the organization of respondent company, a constant current of trade in commerce in said refrigerators so distributed and sold by the respondent, between and among the various States of the United States and in the District of Columbia.

Paragraph three: Certain persons, partnerships, and corporations have been, and are now, engaged in offering for sale and selling, in commerce as hereinabove set out, refrigerators that depend for their cooling processes upon the use of ice that is placed therein for that purpose. Such refrigerators have been for many years commonly known in the trade and by the public as "non-mechanical" refrigerators and are generally so designated.

Certain persons, partnerships, and corporations have been, and are now, engaged in offering for sale and selling, in commerce as hereinabove set out, refrigerators that do not depend for their cooling processes upon the use of ice that is placed therein for that purpose. Such non-ice-using refrigerators are commonly known in the trade and by the public as "mechanical" refrigerators and are so designated.

One type of such mechanical refrigerator depends for its cooling processes upon certain appliances, attachments, and equipment operated by currents of electricity. Mechanical refrigerators of this type are commonly known in the trade and by the public as "electric" refrigerators and are so designated. In recent years, many electric refrigerators have been sold to the public and are now in use in large numbers by the public. A substantial portion of the public has expressed, and actually has, a preference for such electric refrigerators over any other type of refrigerators and the number of said electric refrigerators in use and operation is rapidly increasing.

In the course and conduct of its said business respondent is now, and has been, in competition, in commerce among and between various States of the United States and in the District of Columbia, with other corporations and with partnerships and individuals likewise engaged in distributing and selling such non-mechanical refrigerators in said commerce and is also in competition in said commerce with corporations, partnerships, and individuals distributing and selling in such commerce said mechanical refrigerators, including said electric refrigerators. All of the sellers of the several types of refrigerators are, and have been, in competition, in commerce as hereinabove set out, between and among themselves as to each and all of said types of refrigerators.

Paragraph four: In such competition between the sellers of non-mechanical refrigerators and the sellers of electric refrigerators, one of the controlling influences upon the purchasing public is the popular opinion as to the comparative desirability, effectiveness, and safety in actual operation of the said two types of refrigerators.

The use of ice in refrigerators has long been practiced and its desirability, effectiveness, and safety, such as it may be, is well-known and understood by the purchasing public. Electric refrigerators were only recently invented and introduced into popular use. The public is not generally so well-informed as to the desirability, effectiveness, and safety of such electric refrigerators as it is with respect to these qualities in the non-mechanical refrigerator.

Sellers and distributors of non-mechanical, or ice-using refrigerators, are interested in ,and engaged in, presenting to the purchasing public all available reasons or arguments against, or tending to lessen, the desirability, effectiveness, and safety of said electric refrigerators in actual use.

The use of said electric refrigerators destroys, to the extent of the use thereof, the demand for and sale of ice for use in refrigerators. The increasing sale of electric refrigerators has caused the sellers of non-mechanical refrigerators and the sellers of ice for use therein to attempt to create public sentiment adverse to the use of said electric refrigerators.

Paragraph five: To meet the needs of its customers, the same being sellers of non-mechanical refrigerators and sellers of ice for use therein, respondent has compiled, printed, and published a certain booklet of propaganda against the desirability, effectiveness, and safety of electric refrigerators.

Said booklet purports to state certain facts which respondent claims to have discovered which, it represents, demonstrates that electric refrigerators are in actual use undesirable, ineffective, and unsafe in their effect upon food kept therein and upon persons eating such food.

Respondent names and designates such booklet as "Why Ice is Best for Refrigeration." In order to make such propaganda effective in behalf of sellers of non-mechanical refrigerators and sellers of ice for use therein, respondent furnishes copies of said booklet to its customers to be placed by them, in such ways as they deem most effective, in the hands of members of the purchasing public so as to influence public opinion and create sales resistance against such electric refrigerators and to promote and increase the sale of said non-mechanical refrigerators. Respondent also causes the distribution of said booklet direct to the members of the purchasing public.

Practically all of the purchasers of non-mechanical refrigerators from the respondent are manufacturers or distributors of natural or artificial ice, who resell said refrigerators in connection with their sale of ice for use therein. In some instances, several manufacturers and distributors of ice have organized sales agencies, which agencies purchase said refrigerators from the respondent and resell them to the public for use.

The said booklet is furnished by the respondent to said purchasers, same being manufacturers or distributors of ice, and their respective sales agencies. As furnished to said purchasers, the bookets sometimes do not have imprinted thereon the respondent's name and address but do have imprinted the name and address of the respective purchaser who actually distributes the booket to members of the public.

In the ways hereinabove indicated and by reason of the facts above alleged, sellers of ice for use in non-mechanical refrigerators, as well as sellers of such refrigerators, have an interest adverse to the sale of electric refrigerators and are in practical effect in competition with such sellers of electric refrigerators along with the sellers of non-mechanical refrigerators. The purpose and effect of said booklet is the dissemination of misleading and disparaging propaganda in aid of the sale of non-mechanical refrigerators and of ice therefor.

Paragraph six: For the purpose and intent, and with the effect of disparaging electric refrigerators sold in commerce, as hereinabove set out, and for the purpose and with the intent and effect of promoting the sale in commerce, as aforesaid, of non-mechanical refrigerators and the sale of ice for use therein, the respondent in such booklet, designated as "Why Ice is Best for Refrigeration," by use of false and misleading statements or representations, has falsely represented, directly and by implication and inference, among other things:

(1) That a temperature of from 45 to 50 degrees is the established or required standard temperature necessary to be obtained in all types of refrigerators for the most satisfactory preservation of foods;

(2) That in mechanical or electric refrigerators the proper temperature for the preservation of foods cannot be maintained without detrimentally disturbing the natural composition of the air in the refrigerator and the natural composition of the food;

(3) That the various gases used in electric refrigerators as part of the refrigerant escape from the coils in which they are contained, permeate the food chamber and have a deleterious effect on and taint the foods contained in said refrigerator;

(4) That foods kept in electric refrigerators lose water, or dehydrate to such an extent that their nutritive properties are impaired, destroying essential parts of the chemical combination of various foods in their natural state;

(5) That foods kept in non-mechanical refrigerators do not dehydrate or lose water, to any extent whatever.

(6) That it is possible only with ice to produce the proper temperature control of foods without disturbing the natural composition of the air or food in the refrigerator, and that similar or comparable results can not be obtained by use of electric refrigerators;

(7) That certain poisonous gases, such as sulphur dioxide and chlorine, are formed from the decay of foods stored in electric refrigerators in such quantities that said gases have a harmful effect in tainting foods and in reducing their nutritive value;

(8) That in non-mechanical refrigerators any poisonous gases formed from decay of foods are entirely absorbed by the water from the melting ice and are carried away through the drain pipes thereof, but that in electric refrigerators such poisonous gases are not absorbed, and said gases remain in the ice cubes made in said refrigerator;

(9) That the gelatinous matter found in drain pipes of non-mechanical refrigerators is formed from gases emanating from food contained therein being absorbed and carried away by the water from the melting ice, and that the ice cubes frozen in an electric refrigerator contain the same matter as is claimed to be contained in the drain pipe of a non-mechanical refrigerator; and,

(10) That the users of electric refrigerators will not be able to eat food therefrom, without tasting other food that was stored in the refrigerator at the same time.

Paragraph seven: In truth and in fact a temperature of from 45 to 50 degrees is not an established or required standard temperature for the preservation of goods. Foods are generally better preserved at a temperature of from 40 to 45 degrees. In truth and in fact it is possible and practical to use electric refrigerators in such a manner that the proper temperature for the preservation of foods can be maintained without detrimentally disturbing the natural composition of the air in the refrigerator or the natural composition of the food therein.

The various gases and liquids used as refrigerants in electric refrigerators do not escape from the coils in which they are contained, do not permeate the food chamber and do not have a deleterious effect on or taint the foods contained in electric refrigerators.

In truth and in fact foods kept in electric refrigerators, and in the proper appliances and attachments furnished therewith, do not lose water or dehydrate to such an extent that their nutritive properties are impaired or that essential parts of their chemical combination in the natural state are destroyed.

A great number of foods, when kept in an electric refrigerator, do not dehydrate to any noticeable or harmful extent. Foods kept in non-mechanical refrigerators do dehydrate or lose water to a certain extent. A proper temperature control of foods can be maintained with refrigerants other than ice, without disturbing the natural composition of the air or of the foods themselves.

Poisonous gases, such as sulphur dioxide and chlorine, are not formed from the decay of foods stored in electric refrigerators in such quantities, if at all, that said gases have any harmful effect in tainting foods or have any harmful effect on the eaters of such foods.

In truth and in fact no poisonous gases are formed from the decay of foods when the temperature of the refrigerator is properly controlled and such gases as may be formed from the decay of said foods are not harmful in the quantities found, and are not generally absorbed by the ice cubes made in said electric refrigerators.

The gelatinous matter formed in the drain pipes of non-mechanical refrigerators is not formed from any gases thrown off by foods contained in said refrigerators.

In truth and in fact the ice cubes made in an electric refrigerator do not contain the same gelatinous matter contained in the drain-pipe of a non-mechanical refrigerator. The users of electric refrigerators are able to eat food therefrom without tasting the other foods stored therein.

Paragraph eight: The aforesaid false, misleading and disparaging representations so made in respondent's booklet, "Why Ice is Best for Refrigeration," as above alleged, have had, and now have, the tendency and capacity to mislead and deceive a substantial portion of the purchasing public into the false and erroneous beliefs that said statements are true and that electric refrigerators are undesirable, ineffective, and harmful in the ways alleged and are dangerous to the eaters of food kept in said refrigerators, and that the statements and representations made by respondent with reference to non-mechanical refrigerators and the results to be obtained from a use thereof are true.

Further, said false and misleading statements and representations have the tendency and capacity to, and do, divert trade to the sellers of non-mechanical refrigerators, including the respondent and its customers, from sellers of electric refrigerators and induce the public to purchase non-mechanical refrigerators and ice to be used therin, in and because of such erroneous beliefs brought about as hereinabove set out. As a result thereof, substantial injury has been, and is now, being done by respondent to substantial competition in commerce among and between various states of the United States and in the District of Columbia.

Paragraph nine: The above and foregoing acts, practices and representations of the respondent have been, and are, all to the prejudice of the public and respondent's competitors, as aforesaid, and have been, and are, unfair methods of competition within the meaning and intent of Section 5 of an Act of Congress approved Sept. 26, 1914, entitled "An Act to create a Federal Trade Commission, to define its powers and duties, and for other purposes."

Wherefore, the premises considered, the Federal Trade Commission on this 16th day of April, A. D., 1936, now issues this its complaint against said respondent.

NOTICE

Notice is hereby given you, The Coolerator Co., a corporation, respondent herein, that the 22nd day of May, A. D. 1938, at 2:00 o'clock in the afternoon, is hereby fixed as the time, and the offices of the Federal Trade Commission in the City of Washington, D. C., as the place, when and where a hearing will be had on the charges set forth in this complaint, at which time and place you shall have the right, under said Act, to appear and show cause why an order should not be entered by said Commission requiring you to cease and desist from the violation of the law charged in the complaint.

You are notified and required, on or before the twentieth day after service upon you of this complaint, to file with the Commission an answer to the complaint. If answer is filed, and if your appearance at the place and on the date above stated be not required, due notice to that effect will be given you. The Rules of Practice adopted by the Commission with respect to answer or failure to appear or answer (Rule V) provide as follows:

(a) In case of desire to contest the proceeding the respondent shall, within 20 days from the service of the complaint, file with the Commission an answer to the complaint. Such answer shall contain a short and simple statement of the facts which constitute the ground of defense. Respondent shall specifically admit or deny or explain each of the facts alleged in the complaint, unless respondent is without knowledge, in which case respondent shall so state.

* * * *

(c) Failure of the respondent to file answer within the time above provided and failure to appear at the fixed time and place of hearing shall be deemed to authorize the Commission, without further hearing or notice to respondent, to proceed in regular course on the charges set forth in the complaint, and make, enter, issue, and serve upon respondent findings of fact and an order to cease and desist.

(d) In case respondent desires to waive hearing on the charges set forth in the complaint and not to contest proceeding, the answer may consist of a statement that respondent admits all the material allegations of the complaint to be true. Any such answer shall be deemed to waive hearing thereon, and to authorize the Commission without trial and without further evidence, or other intervening procedure, to make, enter, issue and serve upon respondent:

(1) In cases arising under Section 5 of the Act of Congress approved Sept. 26, 1914, entitled "An Act to create a Federal Trade Commission, to define its powers and duties, and for other purposes" (the Federal Trade Commission Act), ...

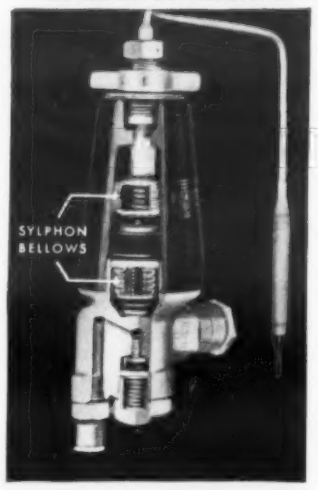
. . . . findings of fact and an order to cease and desist from the violations of law charged in the complaint.

In Witness Whereof, the Federal Trade Commission has caused this its complaint to be signed by its Secretary, and its official seal to be hereto affixed at Washington, D. C., this 16th day of April, A. D., 1936.

By the Commission.

OTIS B. JOHNSON,
Secretary.

FEDDERS uses SYLPHON BELLOWS



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The Refrigeration Engineer's Manual

By S. L. Potts

Principles of Absorption Refrigeration Operation

Chapter 9—Absorption System

In this system of refrigeration the process of condensation is accomplished by a different process from that used in the compression system. The absorption system is made possible owing to the fact that cold water will absorb large quantities of ammonia gas without increasing the volume of the water any noticeable amount. Then when this water containing this large volume of ammonia gas is heated, the gas is driven off in the form in which it was absorbed. Water has a very great affinity or attraction for ammonia gas, and if the gas is permitted to come into contact with cold water, large volumes of the ammonia gas will be absorbed by the cold water. The colder the water the more ammonia it will absorb. The hotter the water the less ammonia it will absorb. This latter condition makes it possible to create the head pressure necessary to cause condensation at temperatures of 60° to 100° F.

The absorption system differs from the compression system only in the manner in which the suction and head pressures are produced. In the compression system, the compressor draws or sucks the ammonia gases out of the evaporating coils, compresses them to such a head pressure that the condensing point is above the temperature of the cooling medium so that the refrigerant returns to the liquid state.

The absorption system draws or sucks the ammonia gases out of the evaporating coils by its affinity for cold water. The cold water absorbs or swallows the gases entirely, tending to lower the pressure in the evaporating coils. When the cold water has absorbed all of the gases possible, or the desired amount to make the water strong liquor, it is pumped into another container where the temperature of the strong ammonia liquor is heated and the absorbed gases are driven off, into the condenser. The condenser, receiver and evaporating coils may be the same for the compression and absorption system.

Ammonia for absorption system. Ammonia is the only refrigerant chemical that can be used successfully in the absorption system. Some other gases are soluble to some smaller degree, some produce chemical actions that prohibit their use, some might be soluble but do not permit the gases to escape when heated or placed under pressure. So that the process of absorption is limited to ammonia as the only one that performs satisfactorily in all respects.

Absorption principle. In the absorption system of refrigeration, the compressor of the compression system is replaced by the absorber, a strong liquor pump and a generator.

Absorber principle. In order to make the action of absorber clear, let us assume that we have a sealed vessel as shown in Fig. 72. From vessel A, which has a capacity of 1,000 cubic feet, we remove all the air and fill it with ammonia gas at atmospheric pressure. Then introduce one cubic foot of water at 32° F. into the pan C and the entire 1,000 cu. ft. of ammonia gas will be absorbed or swallowed by the water, and the space inside the container A will be a partial vacuum (say 25 in.). The water with the ammonia gas is said to be strong liquor ammonia, rich liquor, or aqua ammonia. The strong or rich liquor ammonia is pumped into another closed vessel B of smaller capacity, say 100 cu. ft., and heated to a temperature of say 200° F. The liquor cannot contain but a very small amount of the ammonia gas when hot, and the result is that the greater part of the gas absorbed when cold is driven off when hot. If 900 cu. ft. of the gas is driven off into the volume of 100 cu. ft. the pressure will raise inversely as the volume is decreased. In this case let us assume the volume to be one-ninth of the original volume, therefore, the pressure will be about nine times as much. The original pressure was atmospheric or 14.7 lbs. absolute so the final pressure will be about 14.7×9=132.3 lbs. absolute. If more gas is allowed to enter A, than absorbed by water and the liquor pumped into B, the pressure in B can be raised to any pressure desired.

system using direct expansion coils in the refrigerator box with expansion controlled by the expansion valve.

Definitions

Liquid ammonia is ammonia totally free from water. This is usually called "anhydrous ammonia."

Liquor ammonia is a mixture. It is water containing some part of ammonia gas absorbed into the water.

Strong liquor ammonia. When a large volume of gas has been absorbed by the water, it is said to be strong liquor ammonia, or strong liquor, or rich liquor.

Weak liquor ammonia. When only a small volume of gas has been absorbed or the largest part of the gas absorbed has been driven off the strong liquor, it is said to be weak liquor, or poor liquor.

Absorber. In the absorber, the ammonia gas is drawn from the evaporator coils by the affinity or attraction that water has for ammonia. There the ammonia meets the water or the weak liquor ammonia and the gas is absorbed. The process of absorption reduces the volume occupied by the gas and water to the volume occupied by the water alone.

The tendency is to lower the pressure in the evaporating coils. The pressure in absorber is at, or slightly below, suction pressure. In the process of absorption of gas by the water, a large amount of heat is generated in the absorber. If this heat is not removed, the absorber temperature will rise, the absorbing ability will decrease very rapidly and will eventually stop. Cold water is circulated through a cooling coil inside the absorber to remove the heat generated by the absorption of gas.

As the water or weak ammonia liquor increases in saturation, it becomes strong liquor ammonia. The absorber must be kept cold to produce low temperatures in evaporator coils.

In the type absorber shown in Fig. 73, the ammonia gas is introduced into the absorber through a header in which a large number of small holes are drilled. The gases escape through these small holes and bubble up through the liquor until the gas becomes absorbed. Other types of absorbers operate differently.

Direct Expansion Absorption System

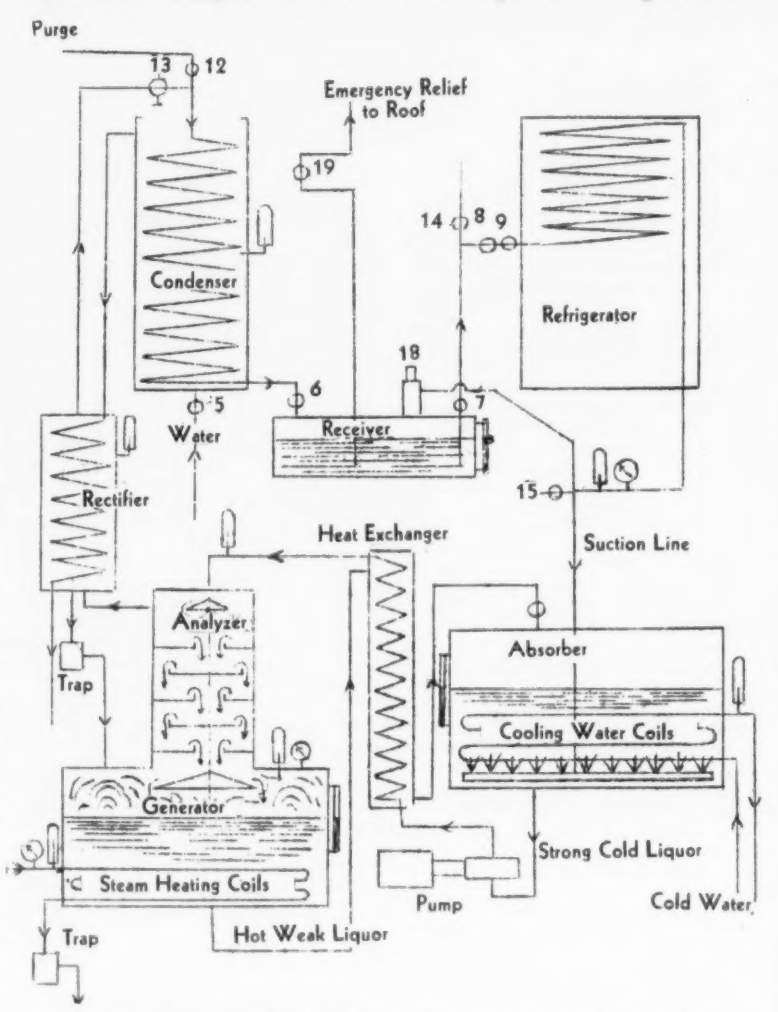

Fig. 75 is a line drawing showing important parts of an absorption refrigeration system using direct expansion coils.

This is exactly the same action that takes place inside a steam boiler when we heat water to the boiling point, then add the latent heat that converts the liquid into a gas and produces a very large increase in the volume of the gas over the volume of the water. The volume into which the steam is generated is limited, so the pressure must increase. This is what we term "getting up steam." In refrigeration, we term this action as "generating the head pressure."

In Fig. 73 is shown a line drawing of the most important parts and pipes for an absorption refrigerating

Absorption Refrigeration Cycle

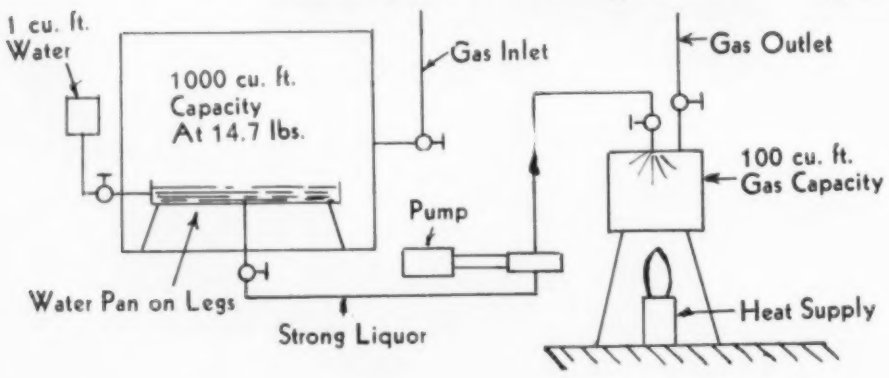

Fig. 74—Sketch showing absorption refrigeration cycle.

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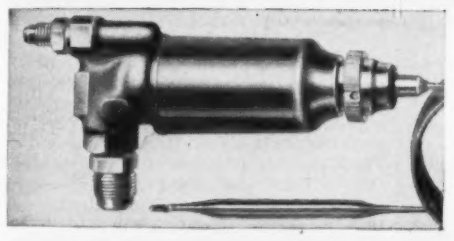
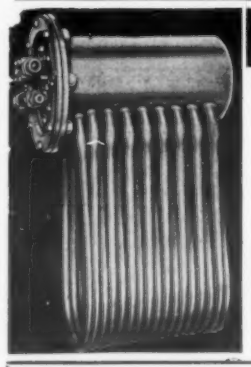
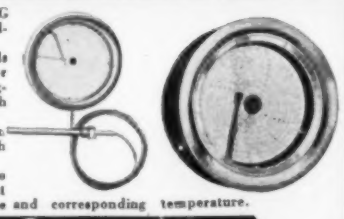
STANDARD REFRIGERATING APPLIANCES

THERMOSTATIC EXPANSION VALVES
Write for bulletin on complete line covering refrigerating appliances, liquid line filters, dehydrators, acid neutralizers, standard parts and materials, service tools, shaft seals, bearing metals and parts. Descriptive literature will be gladly furnished on any or all of these lines on request.
AMERICAN INJECTOR COMPANY 1481-14th. Street, Detroit, Mich.


STANGARD STANDS SUPREME
. . . . in the fine art of recalibration of float valves and the silver soldering of evaporation coils . . . for all makes of Ice Cream Cabinets.
WE MANUFACTURE AND REPLACE . . . Monel Tops Enamel Panels • Tanks Rims and Rim Sleeves . . . all other parts for all make cabinets.

STANGARD PRODUCTS
A Division of Standard Body Corp.
430 E. 104th Street, New York
Write for Details

PURO
ELECTRIC WATER COOLERS
Thoroughly reinforced all steel attractively finished cabinets.
Complete line of different Models and Capacities.
Write for details and sales prices.
Puro Filter Corporation of America
440 Lafayette Street, New York City Spring 7-1800

Refrigeration Instruments by Marsh
MARSH REFRIGERATION RECORDING GAUGES AND THERMOMETERS are available for all applications.
Recording gauges are available with dials reading pounds pressure per square inch for ammonia, Freon and other low pressure refrigerants and in pounds pressure per square inch or atmospheres for carbon dioxide.
Recording thermometers are available in standard ranges for all applications and with bulbs suitable for all media.
Multiple pen instruments can be used to record on the one chart temperatures at several points or, where desired, both pressure and corresponding temperature.

Jas. P. Marsh Corporation
2067 SOUTHPORT AVE., CHICAGO, ILL.

Letters from Service Men

U. E. I. Graduate

Kindly enter my name on your catalog mailing list. I have been a subscriber to this publication for over a year.

I am a graduate of Utilities Engineering Institute, for two years previous to my coming to Chicago, I worked part time as serviceman in Wisconsin, now I am employed by Plonsker Engineering Co., 32 So. Jefferson St. as serviceman and am doing some repair work in the shop.

All through past year I found ELECTRIC REFRIGERATION NEWS most helpful in my advancement. Thanks for printing my recent letter in the NEWS.—Al N. Ivanow, 811 Oakdale Ave., Chicago, Ill.

Wonderful Trade Paper

Enclosed find check for $5.00 for my MASTER SERVICE MANUAL and extension of my subscription for 1 more year.

Kindly enter my name on your catalog mailing service which you are now forming.

Keep up the fine work. You have a wonderful trade paper.—Earl R. Gover, 522 E. Railroad, Nesquehoning, Pa.

Refrigeration on the Farm

Enclosed you will find my check for $3.00 for the renewal of my subscription to ELECTRIC REFRIGERATION NEWS. I would appreciate it very much, if you will put me on your catalog mailing list.—Albert J. Marvel, Idlewild Farms, Easton, Md.

Worth Many Times the Price

Enclosed you will find 20c for two back copies which I desire very much. They are Nov. 6, 1935 and Jan. 8, 1936. I already have your MASTER SERVICE MANUAL and think it worth many times that price to anyone in need of service information. Will you please add my name to your catalog mailing list.—Floyd Eck, Morristown, Ind.

How to Service Majestics

Enclosed you will find 10c for which I would like a copy of the August 16, 1933 issue of ELECTRIC REFRIGERATION NEWS describing the servicing of Majestic Hermetic Refrigerators. Also place my name on your Catalogue Mailing List, as it will be of great help and convenience for anyone in the refrigerator business. I thank you. —Arnold C. Rahn, Columbus, Wis.

Thanks for the Dollar

Enclosed please find a one dollar bill for which please send me four copies of the issue containing Specifications of Electric Refrigerators. I would like my name on Catalog Mailing Service. —E. T. Gallup, 1144 N. Western Ave., Los Angeles, Calif.

Selling and Installing Air Conditioning

I am a subscriber and an interested reader of the ELECTRIC REFRIGERATION NEWS (perhaps a very usual coincidence). Please place my name on your "Catalog Mailing list service". I am selling and installing air-conditioning equipment. Thank you.—Robert E. Creveling, 121 E. Pine St., Alhambra, Calif.

A Reader for 5 Years

I have been a reader of your paper for 5 years, and a subscriber for 3 years and like it very much. In fact I wouldn't be without it.

I wish you would add my name to your catalog mailing list, for the independent service man. Thank you. —Leonard Colson, 2215 Argyle St., Chicago, Ill.

Service on All Makes

Morris Refrigeration Service
930 Scott St., Palo Alto, Calif.

Dear Sir:

We are a subscriber to the ELECTRIC REFRIGERATION NEWS, and wish to be put on your Catalogue Mailing List, as per your advertisement of a few weeks ago.

We are in a strictly service business for household, commercial, and installation on all makes in the district from San Carlos to Sunnyvale, Atherton, Portola, and Los Altos inclusive.

MORRIS REFRIGERATION SERVICE.

Keeps in Touch with the Trade

Polar Refrigeration Service Co.
Service and Repairs on All Makes of Electric Refrigerators
1204 Morrison Ave., Bronx, N. Y.
April 2, 1936.

Gentlemen:

We would appreciate very much your placing us on your mailing list for catalogs.

Have been buying your NEWS at my dealer and find it a very satisfactory medium for keeping in touch with the trade. SAMUEL ZISKIND.

Finds News Is Helpful

C. E. Madison
Refrigeration Service
2070 Allston Way, Berkeley, Calif.

Gentlemen:

Kindly place my name on your catalog mailing list as a dealer who installs and services domestic and commercial equipment. We have been enjoying the ELECTRIC REFRIGERATION NEWS and find it very helpful.

C. E. MADISON.

Catalogs Give Much Information

E. R. Davis
Refrigeration Service
P. O. Box 893, Pittsburg, Calif.

Dear Sirs:

Please list me on your Catalog Mailing list as an independent service company as this is a very good thing for both the service man and manufacturing company.

One other publisher has such a list and it sure helps in keeping up with the latest developments and if a fellow doesn't keep up in this game he had better quit as I believe it to be one of the fastest growing industries today. E. R. DAVIS.

Complete 'News' of Industry

I have been noting with increasing interest, the response to your recent announcement of a "Catalog Mailing Service" and I wish to compliment you on this added service to the service men of the refrigeration industry.

I also wish to take this opportunity to express my appreciation of being served with such a complete "NEWS" of the doings of the industry. Please add my name to your catalog mailing list.—Le Roy G. Hall, 1617 O St., Sacramento, Calif.

Like a Boat Without a Pilot

Apparently our subscription to REFRIGERATION NEWS has expired. Please renew this for one year. I will appreciate your forwarding one copy each of the issues which we have missed, invoicing us accordingly. Needless to say, a person in the refrigerator business without REFRIGERATION NEWS is in the same predicament as a boat without a pilot.—F. M. Cole, Manager, Refrigeration Dept., Monroe Furniture Co., Ltd., Monroe, La.

Parts Manufacturer Rates Those Who Register for "Catalog Mailing Service" As the "Cream of the Crop"

Questionaire to Dealers and Service Companies Will Request Data for Classification of Names

Ranco
The Thermostat Division of the Automatic Reclosing Circuit Breaker Co.
Sixth and Indianola Ave.
Columbus, Ohio
April 28, 1936.

Refrigeration News:

Ranco wishes to express their thanks and compliment you on the fine idea for allowing the service man to get in direct contact with manufacturers of refrigerating equipment, and their other sources of supply by entering their names on your catalogue mailing list, and having them published in ELECTRIC REFRIGERATION NEWS.

Names listed in REFRIGERATION NEWS in our estimation are the "cream of the crop," since they have been alert enough to take the opportunity of writing to you and having their name published. These men must be wide awake individuals who certainly want catalogues and information on the latest developments, and will use them after they get them.

In writing to these individuals, we have had one letter returned with a notation from the post office stating that there is no such number. We thought it best to call this to your attention so that this individual or yourself could submit a correction. This name was published in the Feb. 19 issue and was listed as Harold T. Schmitzer, 4900 Bergen St., Brooklyn, New York.

(*Note*: See correction below.)

The writer also wishes to compliment George Taubeneck on his interesting articles and his fine style of writing. I have actually been going around the world with him.

C. E. WHIPPS, Sales Dept.

Answer: Harold T. Schnitzer (not Schmitzer), 1900 (not 4900) Bergen St., Brooklyn, N. Y., wrote us on Feb. 25 and called attention to the incorrect street number, also the error in spelling his name, but his letter (like many others) was not published due to lack of space.

More letters from service men (and others) who want the Catalog Mailing Service appear on this page, but so many are coming in that we cannot publish all of them. In the future, preference will be given to those which contain some interesting bit of news or service experience.

We surmised that live manufacturers and jobbers would take note of these names and send their catalogs. We are glad to know of such action, especially since we have been so long delayed in getting our own plan perfected.

There have been two principal reasons for the delay in the Catalog Mailing Service:

(1) The unusual industry activity this year (added to the normal seasonal peak) has kept our entire staff working overtime.

(2) The manufacturers who have been clamoring for a mailing service seem to have an unlimited variety of ideas about the number, vocational classification, and geographical division of the names they want to reach.

Right now we are ready to make a few experimental mailings to selected lists of jobbers, dealers, and service men. We can develop the plan gradually and later we will be able to make mailing to any number or classifications desired.

Our present plan is to furnish a folder (of standard size for filing) in which will be enclosed a dozen or more leaflets from various companies. In each folder will be an index of the material, also a reply form and envelope for convenient use in requesting additional information or other literature offered. On receipt of this request, we will transmit the inquiries to each company, using a standard form.

In order to insure special attention to such inquiries, we will ask all those who desire the service to furnish certain essential facts about their business so that all names may be properly classified. This will avoid the delays in handling ordinary inquiries due to the necessity of making investigations.

Obviously the plan involves considerable preliminary work in setting up the system and some experimenting will be necessary to get all the details of the plan worked out.

Service men are invited to register for the service (no charge). It won't be long now until you receive the *first folder* to start your file.

Can't Afford to Be Without News

For years I have wanted a subscription to your ELECTRIC REFRIGERATION NEWS, but have felt as though I couldn't afford it. After looking at a sample copy sent to a friend of mine I feel as though I can't afford to be without it so am sending money order to cover a year's subscription. Will you please send the back issues to Jan. 1, 1936, to include all instalments of REFRIGERATION ENGINEERS MANUAL in my subscription. Also please add my name to the Catalogue mailing list that you are compiling.—Edward C. Hoyt, 13 Beauport Ave., Gloucester, Mass.

Manual Is Very Helpful

I am a subscriber to the ELECTRIC REFRIGERATION NEWS, and would appreciate your adding my name to the Catalogue mailing service list. I have the MASTER SERVICE MANUAL and I find it very helpful. Thanking you.—Billy Zaslow, 268 Saratoga Ave., Brooklyn, N. Y.

Greatest Value

I am a recent subscriber to your paper and find it of the greatest value, inasmuch as my work is mainly servicing. I would be grateful if you would put my name on your catalog mailing list.—Robert S. Econome, c/o Refrigeration Repair Service, 97 So. Portland Ave., Brooklyn, N. Y.

R.A.C.I. Student

Please put me on your Catalog Mailing Service List. I subscribed to your NEWS through the Refrigeration & Air Conditioning Institute. I am going to work in the field in a very short time and will have use for both the NEWS and catalogs.—Argo L. Mattison, 2900 Newton Ave., N., Minneapolis, Minn.

All Available Information

As a subscriber to ELECTRIC REFRIGERATION NEWS, please place our name on your manufacturers' mailing list so that we may receive all available information from these sources.—Al Meinke Refrigerator Service, 848 Woodrow St., Madison, Wisc.

HERKIMER INSTITUTE

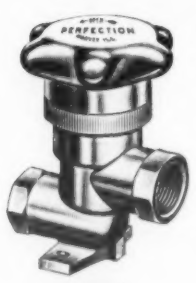
Offers well-balanced courses combining theory and practice of Refrigeration, Air Conditioning, Oil Heating, and Burners. Complete thorough training, including

SERVICING ESTIMATING SURVEYS INSTALLATION SHOP MANAGEMENT

Inquire 1819 Broadway, New York City

QUALITY

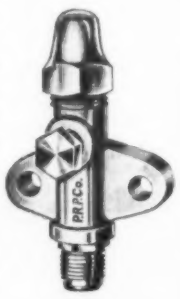
VALVES AND FITTINGS



IN keeping with our expansion program to meet the needs of the trade, Perfection now offers a very complete line of Refrigeration Valves and Fittings.

Rugged construction of highest quality materials enables these quality products to withstand even the most unusually severe usage.

Valve Bodies are made of forged brass having grain structure that prevents seepage of refrigerant . . . Stems are corrosion proof . . . Openings are designed for minimum of restrictions . . . Recognizing the importance of leakproof joints, threads and seats are as near perfect as possible.



Valve threads are fitted with internally seated brass protecting caps—and cardboard sleeves are put on fittings to assure protection while in transit.

All these parts are subjected to rigid inspection, are put up in attractive packages, and carry the regular Perfection guarantee.

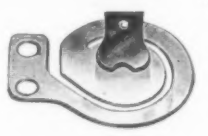
PERFECTION

PRECISION

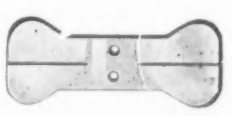
PARTS FOR COMPRESSORS

ALL Perfection Replacement Parts *are certified to excel.*

Throughout every stage of production Perfection takes the greatest care to produce finished parts that will be easy to install, will fit perfectly, operate quietly and insure long, dependable service.



These parts are made especially for replacement purpose by skilled workmen — many of whom have been with Perfection for more than 15 years.



Precision accuracy and rigid inspection is maintained through every stage as these parts—starting from raw materials—pass through the various departments of the Perfection 7½ acre factory.

A distinctive and attractive package adds the final touch to the saleability of these quality replacements—and jobbers and servicemen know that it pays to concentrate on Perfection Certified Parts.

PERFECTION REFRIGERATION PARTS CO.

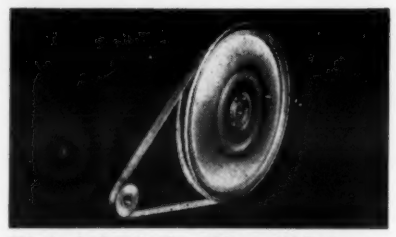
A division of the Perfection Gear Company [Established 1919] HARVEY, ILLINOIS

The Buyer's Guide

Special rates apply to this column only. Write Advertising Dept. for full information.

LEADING MAKERS OF REFRIGERATING AND AIR CONDITIONING EQUIPMENT STANDARDIZE ON

Dayton V-BELTS



Whether for Fractional or a Thousand H.P. there is a Dayton V-Belt Drive for the job.

● Because of their outstanding advantages Dayton V-Belts have been used as original equipment on leading makes of air conditioning equipment, electric refrigerators, washing machines and other appliances for many years.

Dayton V-Belts are the logical choice because they provide silent, dependable transmission—because their powerful grip prevents slippage—because they run smoothly without weaving, twisting or vibrating.

A nearby distributor carries a complete stock of Dayton V-Belts at all times and can quickly supply you.

Write us for price list and complete information.

THE DAYTON RUBBER MANUFACTURING CO. • DAYTON, OHIO

World's Largest Manufacturer of V-Belts

Nationally Advertised

COMMERCIAL CABINETS

Complete Line • Heavily Insulated
Many Exclusive Features

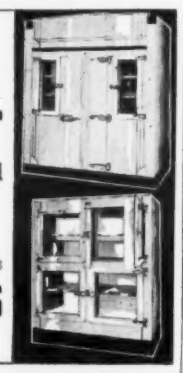
DISTRIBUTORS WANTED

Write for Catalog and Submit Qualifications

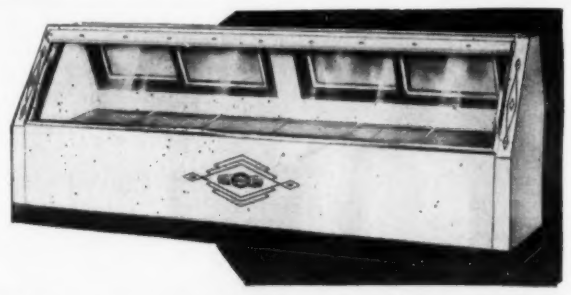
KOCH REFRIGERATORS

(Established 1883)
North Kansas City, Mo.

NEW KOCH SELL-O-VISION REFRIGERATORS



Complete line of Refrigerators, Display Cases, Store Fixtures. Desirable territory available. Write for particulars.



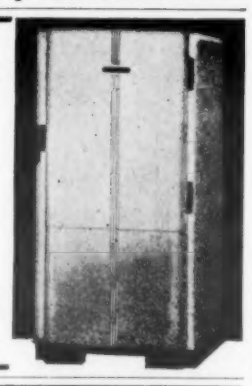
QUALITY THESCO SINCE 1870

THE C. SCHMIDT CO., CINCINNATI

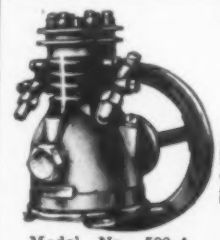
DAYTON *Gives You*

You control your own re-sale prices, selling methods and profits with Dayton. Write for Money-making facts on line and policies.

- Long Discounts
- Interchangeable Snap-On Colors
- Quiet Performance
- DeLuxe Cabinets



HEINZ & MUNSCHAUER
22 Superior St. *Established 1865* **Buffalo, N.Y.**



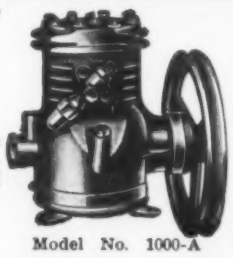
"CHIEFTAIN"
QUALITY-BUILT COMPRESSORS and CONDENSING UNITS

All bearings diamond bored. Positive lubrication of piston by newly developed process plus forced feed lubrication in all models.

Sizes: 1/6, 1/5, 1/4, 1/3 h.p.

Write for prices

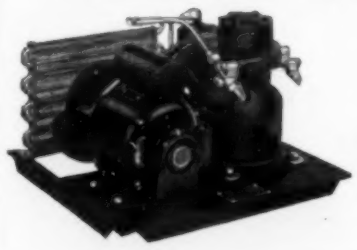
Model No. 500-A



Model No. 1000-A

TECUMSEH PRODUCTS CO.
Tecumseh, Mich.

CONDENSING UNITS and COMPRESSORS
FOR
HOUSEHOLD REFRIGERATION
BY



JOMOCO, INC.
A SUBSIDIARY OF THE
JOHNSON MOTOR CO.
Waukegan, Ill.
CABLE ADDRESS: JOMOCO-WAUKEGAN

21,346 Commercial Condensing Units Sold By Manufacturers to Dealers in March

The following report of commercial refrigerating and air-conditioning equipment sales for March, 1936, were made to the Commercial Refrigeration Section of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) by the following 15 companies:

Brunner Manufacturing Co., Carrier Engineering Corp., Crosley Radio Corp., Frigidaire Corp., General Electric Co., Gibson Electric Refrigeration Corp., Kelvinator Corp., Leonard Refrigerator Co., Merchant & Evans Co., Norge Corp., Servel, Inc., Uniflow Manufacturing Co., Universal Cooler Corp., Westinghouse Electric & Manufacturing Co., York Ice Machinery Corp.

	SALES FOR MARCH, 1936							
	Domestic		Canadian		Other Foreign		Total World	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1. Bottle Water Coolers—Complete	81	$ 6,382	.....	.....	14	$ 1,236	95	$ 7,618
2. Pressure Water Coolers—Complete	715	78,499	3	$ 271	29	3,131	747	81,901
3. Water Coolers—Low Side Only	52	3,184	.....	.....	1	72	53	3,256
4. Ice Cream Cabinets—Complete	2,401	313,450	144	14,294	218	23,068	2,763	350,812
5. Ice Cream Holding Cab. Only (Remote)	871	121,925	19	2,252	34	3,722	924	127,899
6. Bottled Beverage Coolers—Complete	4,505	320,985	9	615	58	4,076	4,572	325,676
7. Milk Cooling Cabinets (No High Sides)	161	11,035	.....	.....	74	4,244	235	15,279
8. Air Conditioners—Self-Contained	60	13,377	.....	.....	18	4,863	78	18,240
9. Air Conditioners—Floor Type (No High Sides)	153	58,573	1	550	4	1,325	158	50,448
10. Air Conditioners—Ceiling (Cooling Only—No High Sides)	179	31,088	.....	.....	74	8,193	253	39,281
11. Air Conditioners—Ceiling Type (Equipped for Heating—No High Sides)	23	12,820	.....	.....	.....	.....	23	12,820
12. Air Conditioners—Residential Type (No High Sides, Boilers, or Furnaces)	5	3,000	.....	.....	.....	.....	5	3,000
13. Condensing Units Less Than ⅓ Hp.	2,796	138,401	21	1,850	677	41,566	3,494	181,817
14. Condensing Units—⅓ Hp.	2,462	183,774	17	1,351	611	45,248	3,090	230,373
15. Condensing Units—½ Hp.	1,660	159,201	47	4,909	528	50,106	2,233	214,216
16. Condensing Units—¾ Hp.	1,026	125,028	23	3,151	210	27,098	1,259	155,277
17. Condensing Units—1 Hp.	1,009	149,338	24	4,369	193	30,958	1,226	184,665
18. Condensing Units—1½ Hp.	929	180,483	7	1,369	93	18,198	1,029	200,050
19. Condensing Units—2 Hp.	249	50,251	....	.....	32	6,092	281	56,343
20. Condensing Units—3 Hp.	133	37,408	1	206	39	8,279	173	45,893
21. Condensing Units—5 Hp.	76	34,314	.....	.....	5	2,448	81	36,762
22. Condensing Units—7½ Hp.	16	9,633	.....	.....	11	6,191	27	15,824
23. Condensing Units—10 Hp.	69	46,603	.....	.....	5	3,396	74	49,999
24. Condensing Units—15 Hp.	41	28,311	.....	.....	8	5,607	49	33,918
25. Condensing Units—20 Hp.	46	52,767	.....	.....	.....	.....	46	52,767
26. Condensing Units—25 Hp.	27	33,323	.....	.....	.....	.....	27	33,323
27. Total Lines 13 to 26 Inclusive	**10,539**	.....	**140**	.....	**2,412**	.....	**13,091**	.....
28. Total Lines 1, 2, 4, 6, 8, and 27	**18,301**	.....	**296**	.....	**2,749**	.....	**21,346**	.....
29. Commercial Evaporators (Not Reported Above)	3,696	105,387	171	5,757	1,104	31,231	4,971	142,375
30. Air-Conditioning Evaporators (Not Reported Above)	103	22,068	.....	.....	1	700	104	22,768
31. Total Commercial & Air Conditioning	.....	**$2,330,608**	.....	**$40,944**	.....	**$331,048**	.....	**$2,702,600**

15 Companies Sell 265,904 Electric Refrigerators In Month of March

The following 15 member companies of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) reported household refrigerator sales for March, 1936: Apex Electrical Mfg. Co., Crosley Radio Corp., Fairbanks, Morse & Co., Frigidaire Corp., General Electric Co., Gibson Electric Refrigeration Co., Kelvinator Corp., Leonard Refrigerator Co., Norge Corp., Servel, Inc. (export only), Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Uniflow Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co. Member companies not reporting included: Jomoco, Inc., Merchant & Evans Co., and Sparks-Withington Co.

The sales of the reporting companies do, however, include units manufactured for the following concerns: Major Appliance Corp., Montgomery Ward & Co., Potter Refrigerator Corp., and Sears, Roebuck & Co.

Lacquer (Exterior) Cabinets Complete	SALES FOR MARCH, 1936 Domestic Quantity	Domestic Value	Canadian Quantity	Canadian Value	Other Foreign Quantity	Other Foreign Value
1. Chest	386	$ 18,981	11	$ 535	73	$ 3,709
2. Less than 3 cu. ft.	31	1,806	.....	.....	6	311
3. 3 to 3.99 cu. ft.	5,701	328,874	179	11,015	4,112	235,705
4. 4 to 4.99 cu. ft.	32,680	2,163,998	772	52,437	3,974	273,633
5. 5 to 5.99 cu. ft.	60,953	4,696,391	887	72,754	1,680	141,778
6. 6 to 6.99 cu. ft.	74,174	6,141,404	249	22,025	1,981	175,346
7. 7 to 7.99 cu. ft.	24,505	2,559,344	301	33,913	539	57,482
8. 8 to 9.99 cu. ft.	5,202	510,661	8	868	46	5,652
9. 10 to 12.99 cu. ft.	2	1,171	.....	.....	3	523
10. 13 cu. ft. and up	.....	.....	.....	.....	4	836
11. Total Lacquer	**203,634**	**16,422,630**	**2,407**	**193,547**	**12,418**	**894,975**
Porcelain (Exterior) Cabinets Complete						
12. Up to 4.99 cu. ft.	1,818	131,845	53	4,587	171	14,317
13. 5 to 5.99 cu. ft.	9,199	778,888	63	5,317	293	25,696
14. 6 to 6.99 cu. ft.	17,830	1,653,021	75	7,153	199	19,688
15. 7 to 7.99 cu. ft.	7,290	831,062	21	2,340	207	24,221
16. 8 to 9.99 cu. ft.	4,439	557,129	14	1,723	205	29,258
17. 10 to 12.99 cu. ft.	388	64,652	2	313	61	10,191
18. 13 cu. ft. and up	160	37,946	2	533	32	7,301
19. Total Porcelain	**41,124**	**4,054,543**	**230**	**21,966**	**1,168**	**130,672**
20. Total—Lines 11 and 19	**244,758**	**20,477,173**	**2,637**	**215,513**	**13,586**	**1,025,647**
21. Separate Systems ¼ Hp. or Less	2,768	88,496	.....	.....	1,955	84,568
22. Separate Household Evaporators	121	13,583	60	840	19	480
23. Total—Lines 20, 21, 22	**247,647**	.....	**2,697**	.....	**15,560**	.....
24. Condensing Units ¼ Hp. or Less	522	32,800	13	794	284	16,424
25. Cabinets—No Systems	780	26,939	1	25	218	7,288
26. Total Household	.....	**$20,638,991**	.....	**$219,172**	.....	**1,134,407**

New York Distributors Order 24,536 Units During March

States and Territories	Quantity of Household Low Sides
Alabama	3,557
Arizona	1,429
Arkansas	2,092
California	20,806
Colorado	1,967
Connecticut	4,008
Delaware	433
District of Columbia	2,516
Florida	2,161
Georgia	3,998
Idaho	1,574
Illinois	17,647
Indiana	7,302
Iowa	4,185
Kansas	3,655
Kentucky	3,734
Louisiana	2,785
Maine	905
Maryland	3,046
Massachusetts	9,086
Michigan	9,252
Minnesota	3,164
Mississippi	1,495
Missouri	10,430
Montana	1,099
Nebraska	2,323
Nevada	287
New Hampshire	801
New Jersey	12,206
New Mexico	562
New York	24,536
North Carolina	5,287
North Dakota	520
Ohio	13,986
Oklahoma	3,283
Oregon	3,080
Pennsylvania	21,450
Rhode Island	1,327
South Carolina	2,660
South Dakota	732
Tennessee	4,629
Texas	10,589
Utah	1,798
Vermont	482
Virginia	3,667
Washington	3,663
West Virginia	3,039
Wisconsin	4,034
Wyoming	380
Total United States	**247,647**
Canada	2,697
Other Foreign (Including U. S. Possessions)	15,560
Total for World	**265,904**

Kelvinator March Shipments Set Mark

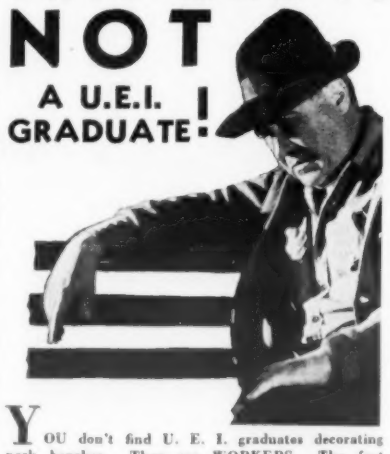
DETROIT—Kelvinator Corp. shipped a total of 149,530 units of household and commercial refrigeration and air-conditioning equipment, during the six-month period ending March 31, reports H. W. Burritt, vice president in charge of sales.

This represents a 46% increase over the 102,715 units shipped during the corresponding period in 1935, Mr. Burritt, said.

Vacaville, Calif., Show Opens This Week

VACAVILLE, Calif. — Plans have been completed for the cooking and refrigeration schools, cake-baking contest, and entertainment which will be part of the Electrical Appliance Show, to be held in the high school gymnasium here May 8 and 9.

THIS MAN IS NOT A U.E.I. GRADUATE!



YOU don't find U. E. I. graduates decorating park benches. They are WORKERS. The fact that a man had the ambition to enroll with us and the intestinal fortitude to stick through a long, tough course of training is indication of his caliber.

It is remarkable how many U. E. I. students enter the Refrigeration and Air Conditioning Field even before graduation and quickly rise to positions of importance. Manufacturers, Dealers and Service Organizations tell us U. E. I. graduates have the training the Refrigeration Industry needs.

U. E. I. trained men are available in all parts of the country. When you need a trained Refrigeration Man, phone or write Utilities Engineering Institute. You will get a better man *more quickly*.

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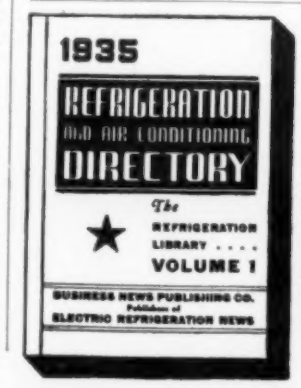
17 West 60th St., New York, N. Y


1935
REFRIGERATION AND AIR CONDITIONING DIRECTORY
The REFRIGERATION LIBRARY VOLUME 1
BUSINESS NEWS PUBLISHING CO.
Publishers of ELECTRIC REFRIGERATION NEWS

The **DIRECTORY** (380 pages, $3.00 per copy) is the industry reference book for all known sources of supply for refrigeration and air-conditioning products. Next edition will be published July 1, 1936.

Every sales executive should have the **MARKET DATA BOOK** (304 pages, $3.00 per copy) for its compilation of sales methods and sales figures recording industry development to date. Next edition to be published Sept. 1, 1936.

Combination Price for Both Books, $5.00

1935
REFRIGERATION AND AIR CONDITIONING MARKET DATA
The REFRIGERATION LIBRARY VOLUME 2
BUSINESS NEWS PUBLISHING CO.
Publishers of ELECTRIC REFRIGERATION NEWS

Air Conditioning

Advantages of Mechanical Cooling for Air Conditioning Work Demonstrated In Reports at Illinois Conference

(*Concluded from Page 1, Column 2*)

no longer looked at with the alarm of some years ago, he said. Where once 30 cubic ft. per minute of outdoor air per person was thought imperative, now 10 or 15 c.f.m. is considered sufficient.

Mechanical refrigeration is best on basis of operating cost and efficiency, according to results in tests of three types of cooling reported to the meeting by Prof. M. E. Fahnestock, research worker of the University of Illinois. Tests were made in the university's research residence with mechanical cooling, ice water, and water from city mains.

Mechanical Cooling Cheaper

On the basis of local electric power, water, and ice charges, the total cost per hour per ton of refrigeration delivered was: mechanical refrigeration, 5.49 cents; water from city main, 6.61 cents; ice, 18.56 cents.

Local costs used in the calculations were: power, 3.1 cents per k.w.h; water, 33 cents per 1,000 gallons; ice, $4 a ton.

These were operating costs. Cost of the original system or of installation was not considered. An 80° F. dry bulb temperature and 50% relative humidity was found to be a comfortable indoor summer air condition for the average individual.

The research workers found it impossible to estimate season cost in advance. Study of weather records of a dozen years revealed best conditions seven times as great in maximum as in minimum seasons.

Although not far from mechanical refrigeration in cost, cooling with water from the city mains at 58° F. was far inferior in comfort results to either ice or mechanical refrigeration because it would not reduce high humidity. Ice and mechanical refrigeration maintained 45% relative humidity, while with water the humidity was never less than 65%.

One type of refrigeration was used during each of the summers of 1932, 1934, and 1935. Warm air heating ducts were utilized for circulating cooled air through the eight-room research residence. Air capacity of the structure is 14,170 cubic feet. Cooling capacity of the water plant was 24,000 B.t.u. per hour, mechanical plant 29,000 B.t.u., ice system 30,000 B.t.u.

The cooling system was located in the basement where air from the system's return pipes passed over the cooling coils before going to a fan and being forced through the mixing chamber and ducts back into the rooms.

Recirculation Rate

Recirculation of the air at the rate of 5½ times per hour was provided by the system, with provision for one air change per hour of fresh into the building from outdoors for ventilation purposes. A 3-hp. Freon compressor provided the cooling effect.

Shutting-down of the cooling system and using the fan and ducts to blow cool outdoor air through the house at night while all second story windows were opened was found satisfactory and economical.

Saving of 20% in hours of refrigeration operation resulted. Equipping the house with awnings on all windows of the three sides exposed to the sun was also economical. It reduced the total cooling load 30%.

During the summer of 1933 two unit room coolers were tested. Both used ice as refrigerant. They materially improved air conditions within the space where located. Even though not centrally placed in the first story, their cooling effect was fairly evenly distributed in all rooms when inside doors remained open.

Filters Stop Hay Fever

Filtration effectively removes pollen grains, cause of hay fever and pollen asthma, from the air, Dr. William H. Welker of the University of Illinois College of Medecine said in reporting research of the past five years at the college and at Illinois research hospital in Chicago.

"In pollen-free air, the hay fever sufferer is relieved of symptoms in one-half to one and one-half hours. Persons suffering from pollen asthma require longer before symptoms are alleviated and finally disappear," the doctor said.

"Houses with heating systems, and particularly those with forced circulation systems, can be equipped with filters for pollen removal at low expense. Machines for individual room treatment are also marketed."

Use of two sets of filters in series removed more than 99% of the microscopic pollen grains. Low relative humidity, while contributing to comfort of the individual, is of minor importance in relief of hay fever and asthma pollen symptoms, he reported.

Dust so fine 120 grains side by side equal the thickness of a human hair is strapped by filters of air-conditioning plants, Prof. F. B. Rowley of the University of Minnesota said. Reasonable cleaning or replacing of the filter is necessary to keep the plant in efficient operating condition, he cautioned.

While some dust in the air is normal, concentration is undesirable and unhealthy. Clean country air, even after washed by rain, has thousands of dust particles per cubic foot. In cities five million or even more particles are often found in a cubic foot of air, he said.

Two Filter Principles

He told of the two filter principles —straining air through small spaces, as through felt pads, and forcing air against oil covered surfaces to which dust adheres. Some filters combine the two. Efficiency is best with low pressure.

Prof. Rowley listed as requirements of a successful filter: high efficiency of dust arrestance, low resistance to flow of air, high dust holding capacity or long life in service, economy in first cost and upkeep.

Comfort in heating or cooling is based upon physiological factors, Prof. A. P. Kratz of the University of Illinois explained. The average sitting person passes off 400 B.t.u. of heat per hour. If more are lost he is cold; if less, he feels hot. Of this amount 210 B.t.u. are lost by radiation, 90 by convection, 100 by evaporation.

"In a properly constructed building the problem of the heating or cooling plant is comparatively simple," he said. "While considerable effort has been directed toward design of the plant, not until recently has enough attention been paid to the structure housing this plant." He discussed heat savings through insulation.

More than half the heat ordinarily wasted by the average home can be saved, S. Konzo, special research associate of the University of Illinois said. Among maximum calculated savings against heat loss he listed wall insulation 20%, and insulation of unfloored attic 14%.

Calculations for determining cooling requirements according to accepted authorities were discussed by Prof. H. J. Macintire; and different types of air-conditioning equipment were listed by E. L. Broderick, research assistant in the University of Illinois.

Denver Hotel Reports 50% Increase in Use of Air-Conditioned Rooms

DENVER—A 50% increase in the patronage of its air conditioned rooms following the installation of a Carrier system late last fall, has led the management of the Brown Palace hotel here to consider its $25,000 installation an important business-building investment, according to M. L. Tracy, assistant manager.

Three central-plant systems with a combined capacity of 75 tons comprise the equipment for this installation. The Casanova, the hotel's exclusive night club is served by one plant, the Ship Tavern and Hindu room by a second, and a private dining room by a third. A year-round temperature of approximately 70° is maintained in the air-conditioned rooms.

One of the most important advantages provided by the air-conditioning system, according to Mr. Tracy, is the elimination of smoke in the rooms. The hotel management has received numerous favorable comments from its guests on this feature, he claims.

The Antlers Hotel at Colorado Springs, one of the largest and best known hotels in the state, has also installed a complete air-conditioning system in its coffee shop and dining room.

The management of another of Denver's leading hotels is now receiving estimates on an air conditioning system to serve a number of its guest rooms, it is reported. Present plans indicate that the job will be installed this summer.

Sweeney Adds 3 Men To Staff for Drive on Air Conditioning

DENVER—Three new men have been added to the staff of B. K. Sweeney Co., General Electric distributor here, in preparation for the company's first big air-conditioning drive this spring.

John Berger, air-conditioning specialist, will be in charge, assisted by two men who are now taking instruction in the G-E air-conditioning school in Omaha.

Although the prospecting will be done by regular salesmen handling other lines, these three men will manage the engineering and closing of a sale, and will make their help available to dealers who have no engineering background.

Dry climate and comparatively low summer temperatures have made Colorado a difficult territory in which to get air conditioning under way, members of the distributing company say.

To combat promoters who have offered air-washing devices as air-conditioning equipment, the Denver company has worked gradually into winter air conditioning, which in dry climate consists of humidification. Officials of the company believe that as people see the results of the drip type units which have been installed in conjunction with various forms of automatic heat, they will be receptive to further improvements providing summer comfort.

Another introductory step which the company has taken is the placing of room air-conditioning units in the offices of executives of small-town power companies, in the belief that these men will become air-conditioning supporters.

Illinois Central Builds Air-Conditioned Train

SCHENECTADY — "Green Diamond," newest of the modern, air-conditioned, streamlined, diesel-electric trains, is now making an exhibition tour through the Mississippi valley, the Southwest, and Great Lakes region, before beginning its daily round-trip service between Chicago and St. Louis in May.

Built for the Illinois Central System in the shops of the Pullman-Standard Car Mfg. Co., the five-car articulated train is G-E equipped.

"Green Diamond" is 330 ft. long, weighs 230 tons, and is mounted on roller bearings. Made of steel and aluminum, it has only half the weight of a standard train accommodating 120 passengers, and requires less than five hours for the 300-mile trip between Chicago and St. Louis. It will supplant two steam trains now required for comparable service.

Power car, main and baggage car, two chair cars, and the kitchen-lounge-observation car make up the five units. In the power car are the main power-generating units for driving the train, and an auxiliary oil engine and generator supplying current.

3 Ortho-Clime Outlets Appointed by Stevenson

CHICAGO—F. F. Stevenson, sales-manager of the air conditioning division of Fairbanks-Morse & Co., has just announced the appointment of three new distributors for Ortho-Clime equipment.

New distributors are Hewitt-Reed Engineering Co., Cleveland; Beckmeyer-Davis Co., Huntington, W. Va.; and Young & Bertke Co., Cincinnati.

Central System Used In New Longchamps Restaurant

NEW YORK CITY—An air-conditioning system of the central plant type has been installed in the new Longchamps restaurant opened here recently at 624 Madison Ave.

Increased patronage resulting from the installation of air-conditioning equipment in several of the chain of nine restaurants which bear the Longchamps name, induced the management to include this feature.

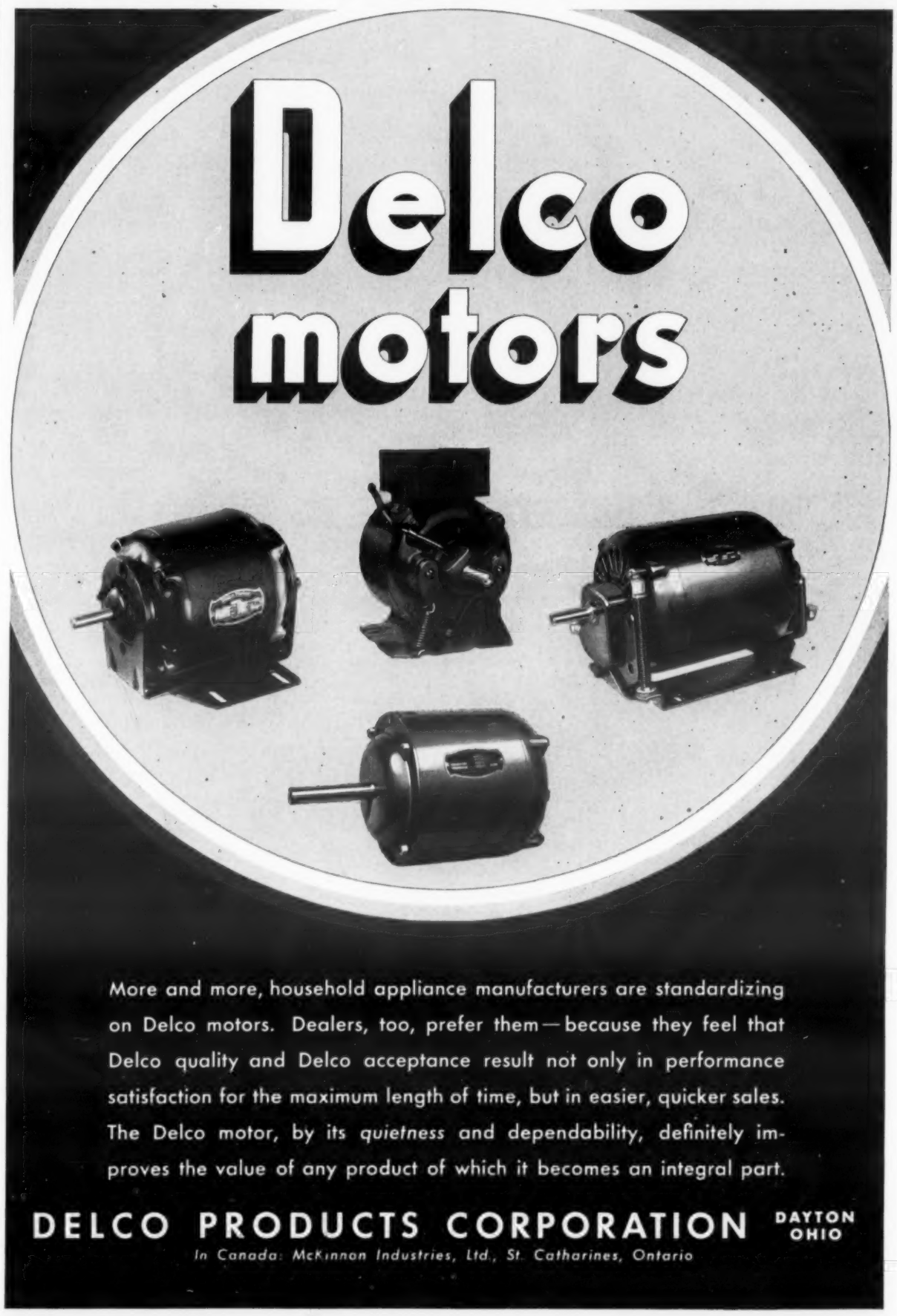
Equipment for the installation consists of three 25-hp. York condensing units, and six C-1500 York air conditioners. A system of fans, with a total capacity of 44,000 c.f.m., circulates the air as it is distributed from the central plant, through specially-designed ducts and concealed grilles.

In planning the installation, the firm of Jaros, Baum & Bolles, consulting engineers, and Louis Allen Abramson, supervising architect, cooperated with York air-conditioning engineers.

Coffee Shop Patronage Boosted by Cooling

STOCKTON, Calif.—Installation of an air-conditioning system in the coffee shop of the Hotel Wolf here last summer increased patronage and "made the cash register ring more often than ever before," claims J. W. Ensign, hotel proprietor and manager.

The air-conditioning system, by maintaining a temperature from 15 to 20° lower than that outside, brought new patrons to the coffee shop, enabled the staff to give more efficient service, and banished cooking odors, the proprietor states.



More and more, household appliance manufacturers are standardizing on Delco motors. Dealers, too, prefer them—because they feel that Delco quality and Delco acceptance result not only in performance satisfaction for the maximum length of time, but in easier, quicker sales. The Delco motor, by its *quietness* and dependability, definitely improves the value of any product of which it becomes an integral part.

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FOR HARD DRAWN COPPER PIPE

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No. 20 for ⅛" to 1⅜" o.d. inc.... 2.75
No. 30 for 1" to 2⅛" o.d. inc.... 3.75

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f. o. b. Dayton

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Each of the following volumes contains all weekly issues of Electric Refrigeration News issued during a period of four months. Stiff paper board covers.

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Vol. 9—May 3 to Aug. 30, 1933. (Serial Nos. 215 to 232.)
Vol. 10—Sept. 6 to Dec. 27, 1933. (Serial Nos. 233 to 249.)
Vol. 11—Jan. 3 to April 25, 1934. (Serial Nos. 250 to 266.)
Vol. 12—May 2 to Aug. 29, 1934. (Serial Nos. 267 to 284.)
Vol. 13—Sept. 5 to Dec. 26, 1934. (Serial Nos. 285 to 301.)
Vol. 14—Jan. 2 to April 24, 1935. (Serial Nos. 302 to 318.)
Vol. 15—May 1 to Aug. 28, 1935. (Serial Nos. 319 to 336.)
Vol. 16—Sept. 4 to Dec. 25, 1935. (Serial Nos. 337 to 353.)

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Questions

Household Specifications

No. 2475 (Dealer, Virginia)—"Is it possible for you to furnish, or will you furnish in the near future, specifications and data on the leading makes of electric refrigerators?

"We would welcome such data as the I. M. E. rating on units, revolutions per minute, the type of unit, the weight of the entire boxes, etc."

Answer: See below.

No. 2476 (Distributor, Iowa)—"We will appreciate it if you will kindly send us mechanical details and specifications of the 'meter-miser' being used by Frigidaire Corp. on their 1936 models."

Answer: See below.

No. 2477 (Dealer, New York)—"Please tell me what is the r.p.m. of the compressor of the super model in the Frigidaire.

"Also give me the r.p.m. of the rollator in the Norge refrigerator."

Answer: See below.

No. 2478 (Dealer, Iowa)—"Please send us the specifications of the Frigidaire refrigerator's new compressor known as the meter miser. Please send them in detail."

Answer: Complete and authoritative specifications of all models of all makes of household electric refrigerators were published in the April 22 issue of ELECTRIC REFRIGERATION NEWS. Copies of these issues may be obtained at a cost of 25 cents each.

Fibre Counter Fronts

No. 2479 (Manufacturer, South Africa)—"Could you please put us in touch with firms making fibreboard sheets suitable for exterior finish on counters and cases, which we build up here locally? We are particularly interested in boards showing marble, or marbilized effect."

Answer: We suggest you contact the following manufacturers with regard to fibreboard sheets suitable for exterior finish on counters and cases:

The Celotex Co.
919 North Michigan Ave.
Chicago, Ill.

Delaware Hard Fibre Co.
Marshallton, Delaware

The Iten Fibre Co.
5400 Bower Ave.
Cleveland, Ohio

National Vulcanized Fibre Co.
East Wilmington, Dela.

Spaulding Fibre Co., Inc.
Stech & Thomas Sts.
Tonawanda, N. Y.

Standard Fibre Specialty Corp.
28 West 21st St.
New York, N. Y.

Refrigerator Thermometers

No. 2480 (Utility, Kentucky)—"Please advise the name of manufacturer where dependable refrigerator thermometers for promotional work may be obtained, also the price, if available."

Answer: Pages 255 and 339 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY lists manufacturers of refrigerator thermometers, and page 19 of the March 4 issue of ELECTRIC REFRIGERATION NEWS shows an advertisement of the U. S. Gauge Co.

Nema Load Test

No. 2481 (Manufacturer, Ohio)—'Will you please forward to me a copy of the Nema standards of load change testing a household refrigerator, or advise me where I may obtain same?"

Answer: The Nema standards of load change for testing a household refrigerator have not been formally approved. For further information on the Nema standards, write to W. M. Timmerman of General Electric Co., Nela Park, Cleveland, Ohio.

'Program Plan Book'

No. 2482 (Manufacturer, New York)—"In column 2, page 2, of the January issue of the ELECTRIC REFRIGERATION NEWS, there is information concerning 'Program Plan Book.' We have a request for four copies of this book and will appreciate it very much if you will inform us whether these may be obtained and also the cost."

Answer: For information regarding the "Program Plan Book" write to the National Kitchen Modernizing Bureau, 420 Lexington Ave., New York City.

Refrigerator Kitchenware

No. 2483 (Dealer, Connecticut)—"Will you please mail me a list of concerns that deal in kitchenware for refrigerators?"

Answer: The Scurlock Kontanerette Corp., 1477 Merchandise Mart, Chicago, has advertised refrigerator kitchenware in ELECTRIC REFRIGERATION NEWS.

We also sending pages 253 through 255 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY which lists manufacturers of accessories.

Zerozone's President

No. 2484 (Distributor, Wisconsin)—"We are trying to learn the name of the president of the Zerozone Corp., Detroit, identified also as the Copeland Products Co., and think that possibly you might have this information available."

Answer: Dallas E. Winslow is president of Dallas E. Winslow, Inc., of which Zerozone Corp. is a subsidiary.

Milk Cooler Market

No. 2485 (Dealer, Massachusetts)—"Can you give us information on the following, which one of our customers wants to know: What are the potential retail sales possibilities in rural districts for farm milk coolers of the sweet water bath type?"

Answer: It's rather hard to supply any definite information. In the first place sales of milk coolers are not reported to any one agency collecting sales figures, so it is difficult to say whether there has been an increasing usage of this equipment.

In the second place, the matter of whether a farmer will need special cooling equipment will depend a great deal on the state and local laws governing the handling of milk. In this connection, it may be safely said that both state and local ordinances have generally tightened up their restrictions.

The Rural Electrification Administration estimates that 867,000 out of a possible 6,800,000 (or roughly one out of eight) farms are receiving electrical service. It is estimated that 175,000 more farms will be electrified this year.

Appliance Sales Figures

No. 2486 (Association, Washington, D. C.)—"Our office represents the Cooking and Heating Appliance Manufacturers of the United States. We are interested in knowing if you have any figures on sales of electrical appliances for the years from 1926 to 1935, broken down by states, and under the heads of electric ranges, washing machines, and household refrigeration.

"We would also appreciate a copy of the January issue of *Electrical Merchandising* as we understand it contains some very interesting figures on sales of electrical appliances last year."

Answer: Sales of electric refrigerators by states for the years 1932, 1933, and 1934, together with a total figure for previous years by states, are given in the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK.

This book also gives sales of electric ranges and washers by years, but not by states.

Sales of household electric refrigerators by states for 1935 are given in the February 5 issue of ELECTRIC REFRIGERATION NEWS. The 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK gives all available statistics on the refrigeration and air conditioning industries, and also some statistics on other appliances. Cost of book is $3.

The McGraw-Hill Co., New York City, is the publisher of *Electrical Merchandising*.

Tyler Showcases

No. 2487 (Distributor, N. J.)—"Kindly advise as to the address of the manufacturer of the Tyler showcase."

Answer: Tyler display cases are made by the Tyler Sales Fixture Co., Niles, Mich. See their advertisement on page 5 of this issue.

Tube Flaring Machine

No. 2488 (Manufacturer, Michigan)—"Can you supply me with information relative to where I can purchase a machine for flaring copper tubing similar to the one manufactured by the Permanent Tool & Mfg. Co., Dayton, Ohio."

Answer: Wolverine Tube Co., 1491 Central Ave., Detroit, Mich., makes a machine for flaring copper tubing.

Refrigerator Load

No. 2489 (Dealer, Pennsylvania)—"I have heard a number of conflicting estimates on what the load is on a good modern electric refrigerator which is receiving the normal amount of use on the average.

"Kindly let me know what your staff considers is: (1) the percentage of loss in opening the door; (2) the per cent load added by the food which is put in; (3) and what percent is standby loss. Leave out the current consumed in making ice cubes because that varies too much by seasons and families.

"Please give me some authentic information."

Answer: An article describing tests on the power consumption and other operating factors of household electric refrigerators, conducted by Prof. Royce E. Johnson, director of the Electrical Standards Laboratory of the University of Wisconsin, was published in the March 25 issue of ELECTRIC REFRIGERATION NEWS. This article supplies some of the data you are seeking.

Sales Figures for 1935

No. 2490 (Advertising Agency, Pennsylvania)—"Recently we purchased a copy of your 1935 MARKET DATA BOOK. We find it of considerable value, but unfortunately it gives no figures for the year 1935. At the present time we are very much interested in obtaining data of refrigerator sales for the year 1935, particularly the sales by months.

"If you have any data available, will you be good enough to send it along to us. We would also appreciate your placing our name on your mailing list to receive a copy of your publication regularly."

Answer: Listed below are the estimated household electric refrigerator sales (manufacturers to distributing outlets) by months for the year 1935:

January	103,400
February	128,400
March	228,000
April	281,900
May	261,100
June	174,860
July	167,000
August	120,700
September	63,852
October	56,690
November	57,027
December	79,240

At the end of the year a check-up on the basis of the estimates which ELECTRIC REFRIGERATION NEWS makes indicated that these figures for monthly sales were probably about 1½% greater than they should have been.

With reference to the request in the last paragraph of your letter, we have no "free mailing list."

Sales in New England

No. 2941 (Publishing House, Massachusetts)—"One of our readers has asked us for information as to the number of mechanical refrigerators now in use in the New England states and we have had to admit that we do not have that definite information; in fact, we are not sure that there is such available information.

"However, we think of your publication as a natural source of such data, and if you can give us without too much time or trouble on your part a fairly close approximation of such refrigerators now in operation in the six New England states, it would be very much appreciated by us.

Answer: We regret that we cannot supply you with figures on the total number of mechanical refrigerators now in use in the New England States, as this information is not available.

However, data on industry sales from 1920 up to 1935 published in the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK, show that manufacturer-to-distributor sales in this period totaled 536,150 units.

Figures for 1935 sales, based on reports of the 14 manufacturing companies who are members of the Refrigeration Division of National Electrical Manufacturers Association, were published in the Feb. 5 issue of ELECTRIC REFRIGERATION NEWS. In these, the sales made during 1935 in the New England States totaled 103,412 units.

Adding these two figures, we get an approximate total of 639,562 units *sold to dealers* in New England by the leading manufacturers.

INFORMAL TALK NUMBER 48

They're Sitting Up Nights Getting Ready To Work For You!

Our job primarily, is training men. But in the final analysis, our greatest service is to the Industry which employs the men we train.

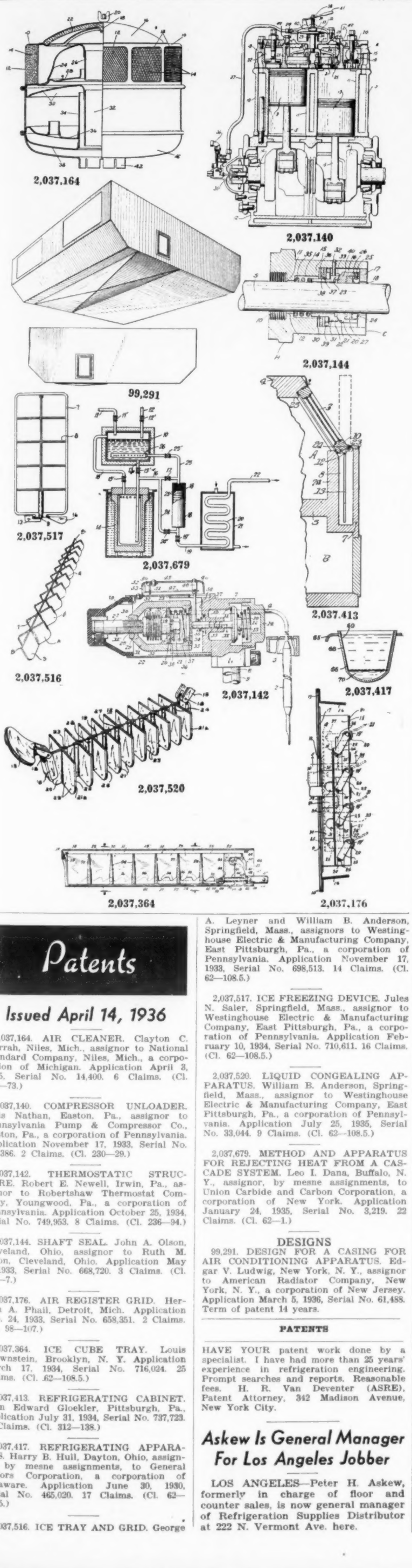
As the one school which enjoys the endorsement and confidence of more than thirty leading manufacturers, many of whom have appointed their own engineers to work with us and actually supervise our training, we are best able to give you the type of men you want.

R-A-C-I Trained men are selected for personal fitness . . . given 600 hours of preparatory training in their homes . . . 100 hours of intensive, practical training in our own Shops. They are trained as you want them trained.

Write for details. No obligation.

The REFRIGERATION & AIR CONDITIONING INSTITUTE
2150 LAWRENCE AVE. • CHICAGO

The Officially Endorsed School



Patents

Issued April 14, 1936

2,037,164. AIR CLEANER. Clayton C. Harrah, Niles, Mich., assignor to National Standard Company, Niles, Mich., a corporation of Michigan. Application April 3, 1935, Serial No. 14,400. 6 Claims. (Cl. 183—73.)

2,037,140. COMPRESSOR UNLOADER. Ellis Nathan, Easton, Pa., assignor to Pennsylvania Pump & Compressor Co., Easton, Pa., a corporation of Pennsylvania. Application November 17, 1933, Serial No. 698,386. 2 Claims. (Cl. 230—29.)

2,037,142. THERMOSTATIC STRUCTURE. Robert E. Newell, Irwin, Pa., assignor to Robertshaw Thermostat Company, Youngwood, Pa., a corporation of Pennsylvania. Application October 25, 1934, Serial No. 749,953. 8 Claims. (Cl. 236—94.)

2,037,144. SHAFT SEAL. John A. Olson, Cleveland, Ohio, assignor to Ruth M. Olson, Cleveland, Ohio. Application May 1, 1933, Serial No. 668,720. 3 Claims. (Cl. 286—7.)

2,037,176. AIR REGISTER GRID. Herman A. Phail, Detroit, Mich. Application Feb. 24, 1933, Serial No. 658,351. 2 Claims. (Cl. 98—107.)

2,037,364. ICE CUBE TRAY. Louis Brownstein, Brooklyn, N. Y. Application March 17, 1934, Serial No. 716,024. 25 Claims. (Cl. 62—108.5.)

2,037,413. REFRIGERATING CABINET. John Edward Gloekler, Pittsburgh, Pa., Application July 31, 1934, Serial No. 737,723. 12 Claims. (Cl. 312—138.)

2,037,417. REFRIGERATING APPARATUS. Harry B. Hull, Dayton, Ohio, assignor, by mesne assignments, to General Motors Corporation, a corporation of Delaware. Application June 30, 1930, Serial No. 465,020. 17 Claims. (Cl. 62—185.5.)

2,037,516. ICE TRAY AND GRID. George A. Leyner and William B. Anderson, Springfield, Mass., assignors to Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., a corporation of Pennsylvania. Application November 17, 1933, Serial No. 698,513. 14 Claims. (Cl. 62—108.5.)

2,037,517. ICE FREEZING DEVICE. Jules N. Saler, Springfield, Mass., assignor to Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., a corporation of Pennsylvania. Application February 10, 1934, Serial No. 710,611. 16 Claims. (Cl. 62—108.5.)

2,037,520. LIQUID CONGEALING APPARATUS. William B. Anderson, Springfield, Mass., assignor to Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., a corporation of Pennsylvania. Application July 25, 1935, Serial No. 33,044. 9 Claims. (Cl. 62—108.5.)

2,037,679. METHOD AND APPARATUS FOR REJECTING HEAT FROM A CASCADE SYSTEM. Leo I. Dana, Buffalo, N. Y., assignor, by mesne assignments, to Union Carbide and Carbon Corporation, a corporation of New York. Application January 24, 1935, Serial No. 3,219. 22 Claims. (Cl. 62—1.)

DESIGNS

99,291. DESIGN FOR A CASING FOR AIR CONDITIONING APPARATUS. Edgar V. Ludwig, New York, N. Y., assignor to American Radiator Company, New York, N. Y., a corporation of New Jersey. Application March 5, 1936, Serial No. 61,488. Term of patent 14 years.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. Van Deventer (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

Askew Is General Manager For Los Angeles Jobber

LOS ANGELES—Peter H. Askew, formerly in charge of floor and counter sales, is now general manager of Refrigeration Supplies Distributor at 222 N. Vermont Ave. here.

Virginia Smelting's Circular Provides New CH_3Cl Data

WEST NORFOLK, Va.—Virginia Smelting Co. has issued a new circular on methyl chloride which provides new data in regard to flammable or explosive limits, a suggested simple rule by which methyl chloride may be safely used for air conditioning, and a revised pressure-temperature table based on gauge pressure instead of absolute pressure, as in previous tables issued by this refrigerant manufacturer.

Under the heading "Flammable Mixtures" the circular says that methyl chloride vapor will ignite when mixed with air, if there is more than 8.1% by volume of methyl chloride, and less than 17.2% by volume. Other proportions will not ignite.

According to the circular, the possibility of fire hazard, or of conditions hazardous to health, can be avoided by limiting the total amount of methyl chloride in any room or confined space, to a quantity, which if completely evaporate, will result in a gas mixture containing not over 2% by volume of methyl chloride. This means not over 2½ lbs. of methyl chloride per 1,000 cu. ft. of space.

Methyl chloride, says the booklet, is miscible with most mineral lubricating oils in all proportions and has the effect of thinning the oil for which reason a fairly viscous oil should be used.

Leaks of methyl chloride can best be detected with a leak detector lamp or torch, it says. Place the open end of the rubber tube which is attached to the lamp near the joint to be tested, and watch the color of the flame. In the presence of methyl chloride the flame will turn from pale blue to bright green.

Trenton Radiator's Catalog Offers Data On Installation Work

TRENTON, N. J.—Trenton Auto Radiator Works has just issued its Catalog No. 336, describing the Kramer refrigerating equipment which it manufactures.

The catalog is divided into three major sections, the first covering walk-in cooler equipment, the second, hotel, grocery, and restaurant equipment, and the third domestic refrigerator equipment.

Included in the first section are coils for standard size walk-in coolers, special walk-in cooler coils, unit coolers, and "Airlator" drip pan and coil combinations for walk-in coolers.

A considerable section of the catalog is devoted to display case coils, bare tube coils, and all-service display coils.

Hotel, restaurant, club, and grocery equipment shown includes refrigerator coils, ice cube makers in commercial sizes, bottle cooling coils, and sheet plate coils.

Domestic equipment described includes ice cube makers, air and water-cooled condensers, and liquid receivers.

The company also offers a tube forming service, in sizes up to 1½ in., in copper, steel, and monel metal.

At the back of the catalog are several pages devoted to engineering data, including a pressure-temperature chart and conversion table, a tabulation of refrigeration loads required for conventional fixtures, charts showing wall heat losses, usage heat loss, and comparative values of insulating materials. Method of figuring refrigeration loads and selecting the proper low side is also outlined.

Borg-Warner Files Suits Against G-M & Frigidaire

NEW YORK CITY, May 5—Borg-Warner Corp. today filed two suits against the General Motors Corp. and Frigidaire Corp. in the United States District Court, southern district of New York.

The first suit, filed under the name of Borg-Warner Corp. and Edward Wilson, charges infringement of Reissue Patent No. 18,251 and Patent No. 1,832,601, both covering a compressor.

The second suit, filed by Borg-Warner alone, charges infringement of Patent No. 1,725,390 (on a compressor); Design Patent No. 0-91,861 (door handle for cabinets); Design Patent No. D-92,158 (base unit for cabinet); and Design Patent No. D-95,730 (refrigerator cabinet).

In the second suit Borg-Warner Corp. also alleges that it developed new and original merchandising methods on electric refrigerators, stressing and dramatizing the rotary compressor. In developing these new merchandising methods Borg-Warner claims it employed certain emblems, models, names and slogans, and it alleges that the emblem suggesting a rotary motion has become a trade-mark for Norge refrigerators.

An injunction is asked to restrain the defendants from using these names, models, emblems and slogans and an award for damages is sought.

Classified

RATES: Fifty words or less, one insertion, $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Electric Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

SALES ENGINEER WANTED. Prominent manufacturer of automatic control equipment has several openings for sales engineers. Previous University training or experience in air conditioning and heating, and an acquaintanceship with architects and engineers is essential. Box 774, Electric Refrigeration News.

REFRIGERATION ENGINEER. Must be capable of designing hermetic unit and putting it in production. State technical training and practical experience. Box 786, Electric Refrigeration News.

WANTED, by large refrigerator manufacturer, cabinet engineer capable of designing economical cabinet and familiar with welded steel construction. Must know costs. State qualifications fully and salary expected. Box 794, Electric Refrigeration News.

WANTED: Commercial refrigeration men. Are you looking for an excellent opportunity to make full use of your training and experience in commercial refrigeration? This advertiser (a manufacturer) has openings for several capable men who know the commercial business thoroughly. Must be able to sell, teach men how to sell, organize and manage territories and make them produce. Our own employees know of this ad. Give full information in first reply which will be held strictly confidential. Box 797, Electric Refrigeration News.

POSITIONS WANTED

TEN YEARS' successful experience in refrigeration, heating and air conditioning in New York metropolitan district. Available June 1st. Well and favorably known among dealers, builders and architects. Want manufacturer connection as district sales manager for substantial line in metropolitan district. Would consider other territory. Particularly adept in building dealer and direct sales organization. Box 792, Electric Refrigeration News.

COMMERCIAL REFRIGERATION sales manager at present employed by large corporation in major city. Will consider retail proposition or manufacturer's representative. Over 18 years' practical and technical experience. Box 798, Electric Refrigeration News.

CAPABLE and experienced sales engineer will want permanent connection with heating and air conditioning concern about July first. Excellent training and record; married. Engineering or sales engineering position in small community desired. Box 796, Electric Refrigeration News.

REFRIGERATION ENGINEER specializing in air conditioning. Expert on Freon and methyl installations and supervision. Familiar with design, layout, and supervision. Expert trouble shooter. Desires a connection with a progressive organization in the capacity of supervisor, field engineer or service manager. At present employed in the above capacity by one of the East's leading air conditioning organizations. Free to go anywhere, but prefer connection in New York City. Box 795, Electric Refrigeration News.

EQUIPMENT FOR SALE

REFRIGERATOR DEALERS! Make money with Federal's reconditioned refrigerators, 1000 refrigerators such as Frigidaire, G. E., Kelvinator, Electrolux, etc., completely remanufactured and rebuilt, some as is, as low as $15; also hundreds of new refrigerators priced for promotional purposes. Federal Refrigerator Corp., 57 East 25th St., New York.

BRAND NEW PARTS. Manufacturers' closeouts—fully guaranteed one year. Detroit Lubricator thermostatic expansion valves, model 673 flange type, $3.95, equipped with S.A.E. fitting $4.45. Detroit Lubricator solenoid valves, model 682, $3.95. "Automatic" model No. 71 solenoid water valves $3.75. Model No. 73 R $3.75. Mullins 3 tray evaporators in all porcelain, complete with porcelain front and porcelain suspension plate trays, etc., $6.95. Hundreds of other exceptional buys, as well as a complete line of standard nationally advertised parts, at drastic price reductions. Write for our catalog. Federal Refrigerator Corporation, 57 East 25th Street, New York City.

EXTRA SPECIAL: New Servel refrigeration twin cylinder compressors ⅓ H. P. complete on base with copper container. Especially adaptable for six hole ice cream cabinets. Less motor. For quick clearance $22.50. Pioneer Refrigeration Equipment, 33 Warren Street, New York City.

NEW SIX HOLE double ice cream cabinets sacrifice price only $33.00. Special 10% discount in lots of two or more. Cabinets are in original crates. Direct expansion type built-in coils. Stainless steel tops. Well insulated. Send for refrigeration bargain list. Pioneer Refrigeration Equipment, 33 Warren Street, New York City.

REPAIR SERVICE

MAJESTIC UNITS, any model, standard or hermetic, rebuilt or exchanged $17.50. Any household model G.E. rebuilt $22.50. All model Majestics in stock for prompt exchange. All prices F.O.B. Chicago and guarantee six months. Wholesale only. Refrigeration Products, Inc., 122 W. Illinois St., Chicago, Ill.

FRIGIDAIRE plain T two temperature valves $2.50. Mercoid No. 848 controls complete with tube $5.00. Try Warrenol for stuck-up compressors. Samples available. Thermostats, float valves, and expansion valves rebuilt. Prompt service. Same day shipment on refrigerant gases. Halectric Laboratory, 1793 Lakeview Road, Cleveland, Ohio.

MAJESTIC UNITS repaired $17.50. General Electric units, $30.00. Send your Majestic units to Ft. Smith and get them fixed right. We positively guarantee that we can make Majestics freeze as fast as when new. Peno Service Co., Ft. Smith, Ark.

GENERAL ELECTRIC sealed units repaired, rebuilt, exchanged, $19.50 up. Majestic sealed units repaired, rebuilt, exchanged, $17.50 up. Largest shop and best equipped in the country. Satisfied customers in every part of the United States. Ship to us. Immediate service. Also U. S. Hermetics. Wholesale only. Refrigerator Engineering Parts & Service Co., 2800 So. Parkway, Chicago, Ill.

SCHOOLS

PRACTICAL REFRIGERATION TRAINING at Universal. Learn by doing. Training on commercial, domestic equipment. Hundreds of units and refrigerators to work on, including repairs to valves, controls, motors, compressors that qualified men for jobs in refrigeration and air conditioning industry. Free folder. Universal Refrigeration Engineering School, 352 Fourth Avenue, New York.

Modern Store Fixture Co. To Sell Lipman Line

DAYTON — Appointment of the Modern Store Fixture & Equipment Co. here as distributor of Lipman commercial refrigeration equipment in the central and western parts of Ohio, has been announced by officials of General Refrigeration Sales Co.

To handle its new line, the company which is headed by C. E. Braden, is opening branch stores in Columbus and Toledo. In the Toledo territory the firm will handle Lipman equipment utilizing methyl chloride and Freon only.

Vacuum Cleaner Sales Up

CLEVELAND — Vacuum cleaner sales reported to Vacuum Cleaners Manufacturers Association for the month of March, 1936, amounted to 114,001 floor cleaners, and 35,878 hand cleaners, according to E. Murray, of the secretary's office.

SILENT AS FALLING SNOW

THE GILMER V-BELT

Here's why the Gilmer V-Belt, for small unit V-drives, is held in high favor by consumers: Besides being sturdy and slipless, it's *noiseless*. In operation, it's as silent as falling snow. Made in standard sizes to fit all refrigerators, air-conditioning equipment, oil burners, beer pumps, water pumps, washers, woodworking tools . . . sleeved and marked for easy identification.

L. H. GILMER COMPANY, Tacony, Philadelphia

MAKERS OF THE WORLD'S BEST-KNOWN V-BELTS